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FACTORS INFLUENCING THE TURNOVER OF  
RATED UNITED STATES AIR FORCE  
OFFICERS WITH LESS THAN  
ELEVEN YEARS OF SERVICE

Richard A. Bonnell, Capt., USAF  
Kenneth D. Hendrick, 1LT., USAF

LSSR 33-81

JUN 1981

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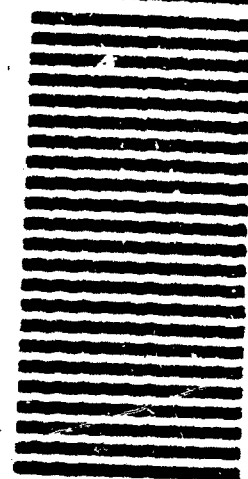


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Block 20:

A current major problem facing Air Force managers is the retention of pilots and navigators in the six to eleven year group. This research uses a conceptual model of turnover as the structure for the study of the pilot and navigator exodus. The USAF Officer Exit Survey, designed and administered by AFMPC, was used as the data base to ascertain the significant determinants of turnover. Assignment policies, satisfaction with supervisory style, pay and benefits were significant determinants for both pilots and navigators. In addition, the opportunity for civilian employment was a significant determinant of turnover for pilots. The authors recommended that the Air Force expand its efforts to improve assignment policies. Some ideas that could be pursued were recommended by the authors.

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FACTORS INFLUENCING THE TURNOVER OF RATED  
UNITED STATES AIR FORCE OFFICERS  
WITH LESS THAN ELEVEN YEARS OF SERVICE

A Thesis

Presented to the Faculty of the School of Systems and Logistics  
of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the Requirements for the  
Degree of Master of Science in Logistics Management

By

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June 1981

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has been accepted by the undersigned on behalf of the faculty  
of the School of Systems and Logistics in partial fulfillment  
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## CHAPTER I

### BACKGROUND AND LITERATURE REVIEW

#### Introduction

A rated officer is a commissioned officer of the United States Air Force who has completed undergraduate flying training (UFT) and has been awarded the aeronautical rating of either navigator or pilot. The subject of rated officer retention is of immediate concern in the United States Air Force. In the words of General Lew Allen, Chief of Staff, United States Air Force:

. . . . . we face an extremely serious problem in the retention of rated personnel. The exodus of young pilots and navigators has affected every aspect of our force planning. These departures will be felt well into the future [21:3].

As long as aircraft continue to be included in the United States military arsenal and as long as aircraft continue to be used as instruments to carry out national policy and insure national security, the Air Force will continue to need pilots. The need for pilots is likely to remain critical for some time. According to pilot continuation rates furnished by the Air Force Manpower and Personnel Center (AFMPC), as of June 1980, for every 100 pilots now in their sixth year of service, only 35 are expected to be in the Air Force by the end of their eleventh year (32:7) (see Table I). Similar

TABLE I  
Pilot Retention (32:7)  
(6th through 11th Year  
Continuation Rates)

Period Ending	Continuation Rate
June 1976	51.9
September 1976	50.6
March 1977	52.2
June 1977	48.5
September 1977	47.9
March 1978	46.3
June 1978	43.8
September 1978	38.5
March 1979	30.2
June 1979	26.9
September 1979	25.7
December 1979	27.5
March 1980	23.7
June 1980	35.4

statistics from AFMPC also reveal a problem in the navigator force. Continuation rates as of June 1980 reveal that for every 100 navigators in their sixth year of service, only 51 could be expected to remain by the end of their eleventh year (32:8) (see Table II).

TABLE II  
Navigator Retention (32:8)  
(6th through 11th Year  
Continuation Rates)

Period Ending	Continuation Rate
September 1976	57.9
March 1977	56.4
June 1977	52.8
September 1977	49.3
March 1978	53.6
June 1978	56.1
September 1978	53.0
March 1979	43.3
June 1979	41.1
September 1979	44.4
December 1979	49.3
March 1980	50.2
June 1980	51.3

### Background

A combination of low Undergraduate Flying Training rates and sharply increasing losses has generated a rapid transition from rated personnel overages to projected deficits. As of 30 September 1979, the active pilot force was 1,300 pilots short of Air Force requirements. If the current retention trends prevail, the Air Force inventory shortage may very

TABLE III  
Navigator Shortfall (31)

Fiscal Year	Shortfall
1980	-269
1981	-811
1982	-924
1983	-934
1984	-810
1985	-482
1986	-164

well exceed 3,000 by 1984. Although navigator losses have been less dramatic, deficits of approximately 900 are possible by the mid-1980's (33:3). Personnel specialists at AFMPC concede that navigator resource management between FY 81-83 will be difficult (31:51). The current navigator shortfall, the result of high losses and low Undergraduate Navigator Training (UNT) production, is projected to continue through the Five-Year Defense Plan (FYDP) (see Table III). The problem has become so acute that the Rated Management Planning Group (RMPG) was formed by the Air Force in November 1979 to spearhead efforts to reduce the projected deficits.

This thesis concentrated on the problem of rated officer retention. More specifically, this thesis examined the specific factors influencing the turnover of junior rated officers. For the purpose of this thesis, a junior rated

officer was defined to be either a pilot or navigator with between six and eleven years total active federal military service (TAFMS). For the purposes of this thesis, turnover was defined as the voluntary separation of an individual from the Air Force. That is, an individual makes the decision to leave the Air Force for employment in other areas. The perceptions of junior USAF rated officers, pilots and navigators with eleven years or less TAFMS were surveyed to test whether these factors were significant reasons prompting voluntary separation from the Air Force.

#### Literature Review

Personnel management of the USAF officer structure is affected by the fact that the Air Force is a closed system. The Air Force does not recruit qualified people for middle and higher level management positions as does private industry. Therefore, the Air Force must groom and train its own leaders from within the existing officer corps. In fact, all officers are treated as if they will one day have to fill senior command positions. The whole-man concept is officially described in The USAF Personnel Plan, Total Objective Plan for Line Officers (TOPLINE):

The Air Force must continue to produce officers whose interests and compatibilities become broader as they become more senior in grade, and move up the levels of staff and command. This is an inherent function of a closed personnel system that must produce its own leaders. . . . It is an important aspect of TOPLINE that all career officers should have equal, competitive opportunity to reach higher ranks and responsibilities [39:Section 1,p.3].

Under the whole-man concept all officers are expected to perform well in some basic Air Force specialty while demonstrating the potential to progress in levels of responsibility as well as the ability to perform well in more than one functional area. This whole-man concept has resulted in a competitive up-or-out policy which has the purpose of providing at each grade more officers who are qualified to serve in the next grade than the billets require. Under this policy used by the Air Force, an officer must, at set intervals, advance in grade or be forced from active duty by involuntary retirement or discharge. The Defense Manpower Commission (DMC) was created by Congressional decree in November 1973 to investigate ways of reducing manpower dollars without impairing the national ability to meet defense commitments throughout the next decade. In the spring of 1976, the DMC concluded its study on the United States Armed Forces structure, training, utilization, and management. The DMC was especially critical of the up-or-out policy:

This has been one of the most controversial subjects in the personnel management arena. Its application as a force management and particularly as a force reduction tool has created morale problems, particularly within the officer ranks, and has caused personnel turbulence and personal hardship. The basic argument with this concept is that it is failure oriented. It gives the message to service members who are not selected for promotion that they can no longer contribute to the mission. It is inconceivable that a service member who had been screened many times during his life by other promotion boards, and by other evaluations is suddenly of no further value to his service simply because the service does not have enough promotions to go around [10:261].

Stemming from the whole-man concept and the up-or-out policy is the need for career broadening by a rated officer to make him<sup>1</sup> competitive in the promotion cycles. Career broadening, commonly referred to as rated supplement duty, is typically the situation in which rated officers perform non-rated duties in pursuit of academic degrees and professional military education as well as the daily responsibilities found in support career areas. The rated supplement is composed of rated officers, lieutenant colonel and below, who are qualified for flight duty (35:70). The purpose is to provide the Air Force a means of storing its wartime assets, pilots and navigators, while continuing to career broaden the rated officer and further his executive development. Additionally, the Air Force is able to make use of rated expertise in various nonrated areas. There are currently 44 support career areas open to the rated officer in addition to the programs offering advanced academic degrees and professional military education. The highest number of rated officers assigned to rated supplement duty was 7,712 at the end of FY 1976. At the end of FY 1980 there were 2,474 assigned to rated supplement duty, and the projection for the end of FY 1981 was 2,105 (35:70). The perception of rated officers that career broadening is essential under the up-or-out system was voiced by General Russell

---

<sup>1</sup>Throughout this thesis, the masculine is used for ease of communication. However, both male and female are included, and no slighting of the female is intended.

E. Dougherty while serving as Commander-in-Chief of the Strategic Air Command:

. . . I have heard a certain complaint from young officer crew members. . . often enough to disturb me greatly, and to prompt me to discuss it with you. The phrase goes something like this: "I've just got to get off this combat crew soon, get some PME and get a good staff job, or I'll never get promoted." I have talked about this with the Chief of Staff, Personnel, USAF -- we agree that . . . this concern must be addressed [9:3]

Portions of the up-or-out policy have been addressed by several researchers over the past decade. Major Albert H. Schroetel served a tour of duty at Headquarters USAF, Deputy Chief of Staff for Personnel, Directorate of Personnel Plans, before attending Air Command and Staff College (ACSC) in 1977. In his ACSC research paper, "A Cost Comparison of Alternative Personnel Management Systems for USAF Officers," he examined alternatives to the current promotion system from a life cycle cost basis rather than from only the basis of current budget year costs. Major Schroetel realized a major motivation to change the current system is the savings that result in the Defense Budget for military personnel. Using computer simulation models, he measured the savings that might result in the Defense Budget by eliminating the up-or-out promotion policy and permitting all regular captains who have been deferred for promotion to major to remain on active duty as captains and retire at the 20-year mark. Schroetel found that if the up-or-out system were eliminated, significant savings would be realized by the Air Force in retaining pilots who had been passed over for promotion to major. Savings with

regard to navigators was minimal (26).

Major Byron L. Bennett, in another ACSC research paper in 1976, determined that elimination of the up-or-out policy would be advantageous in the case of rated officers. However, the training costs of rated officers would need to overcome the life cycle cost of higher base pay and retirement costs resulting from allowing these personnel to remain on active duty after failing to advance in grade. Major Bennett recommended a "dual track" system for pilots and navigators. He further recommended: "The 'up-or-out' promotion system should be modified to allow selected pilots and navigators who are performing well in primary duties to remain at that duty [3:22]."

Another ACSC research effort in 1974 by Major Stephen F. Altick and Major Richard L. Speros criticized the whole-man concept. Rather than basing their conclusions in dollars and cents terms, these authors considered costs in terms of the expertise and experience lost to the fighting arm of the Air Force. The whole-man concept was found overly expensive in the four tactical fighter wings sampled. They concluded that the Air Force cannot afford the luxury of making each combat ready aircrew member a well-rounded, versatile military performer without seriously affecting the experience level of a tactical flying unit (2).

Earlier ACSC studies are predominately qualitative arguments and generally hold that the current personnel management philosophy is costly. One researcher wrote:

While these costs do not represent the full cost of replacement, it is still easy to see that for just one year group of pilots and navigators, over 94 million dollars in new training will be lost. In this age of austerity and rising costs, these losses cannot be tolerated [12:9].

Another researcher added: "It is clear that replacing an officer that is released because of 'up-or-out' is very expensive. As never before, the Air Force must conserve dollars . . . [6:25]."

The belief that the up-or-out system is wasteful is not unique to ACSC students. Examples of this concern appear in the Defense Officer Personnel Management Act (DOPMA) hearings. An Air Force Times article reported that during DOPMA hearings before the Senate Armed Services Subcommittee, Chairman Sam Nunn strongly criticized up-or-out (28:3).

Countless additional studies of the Air Force's personnel system and its effect on rated retention have been documented. The results of a recent independent study presented to the American Psychological Association were quoted as evidence that pilots leave the Air Force because they are not allowed to fly enough (40:1). The researchers contend that Air Force pilot attrition problems are caused by poor job satisfaction brought on by a de-emphasis of the actual flying portion of their jobs. The study recognized pilot attrition could not be reduced by one or two simple solutions such as higher pay or increased benefits. The solution is more complex and involves personnel management policies as well as those issues directly related to leadership,

management, and supervision. The researcher went on to say:

Much of the dissatisfaction of Air Force pilots in flying jobs is with such things as additional duties, pressures to obtain additional education, pressures to broaden into non-flying career fields and lack of opportunity for promotion in flying jobs [40:23].

The more general subject of personnel turnover was treated in an Air Force Institute of Technology (AFIT) thesis in 1978 by Major Ronald L. Blackburn and Captain Randall L. Johnson. These researchers developed a model describing the turnover of junior officers in the Air Force (4). The model developed by Blackburn and Johnson will be employed as the basic framework for this research effort dealing with Air Force pilots and navigators. The data collection instrument for their thesis was the 1977 United States Air Force Quality of Air Force Life Active Duty Air Force Personnel Survey.

#### Blackburn and Johnson Model

Blackburn and Johnson attempted to determine if the relationships between the determinants, intervening variables and turnover, as presented in the related literature, held when applied to the turnover of young officers in the Air Force. Based on their literature search, they proposed a model composed of the intervening variables, expectations, job satisfaction and opportunity, and ten determinant variables of turnover (4:35) (see Fig. 1). The determinant variables identified by Blackburn and Johnson were: age, tenure, pay, promotion, peer group integration, role clarity, job autonomy and responsibility, task repetitiveness, satisfaction with

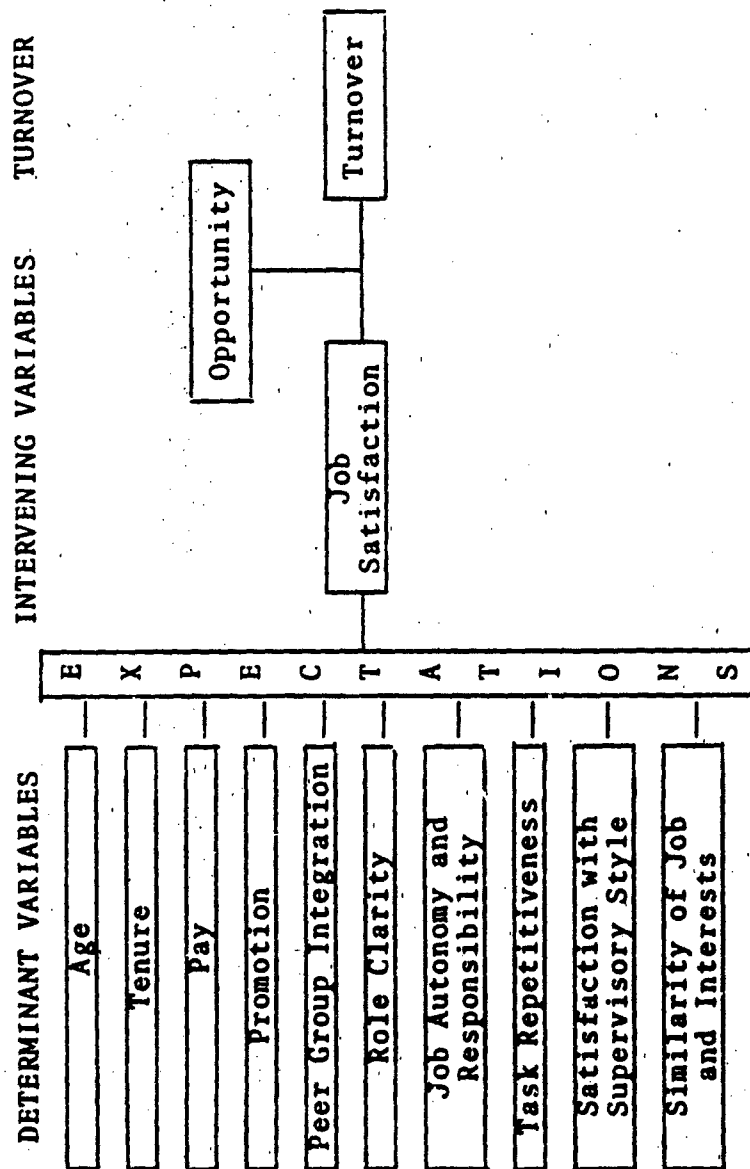


Fig 1. Blackburn and Johnson's Synthesized Model (4)

supervisory style, and similarity of job and interests (4:40). Although proposed in their conceptual model, the relationship between the two determinants, task repetitiveness and similarity of job and interests, and turnover was not statistically tested in their research.

#### Gulick and Laakman Model

The thesis completed by Captain Clyde Gulick and Major Henry E. Laakman in 1980 at AFIT deserves special mention at this junction. Their "Analysis of Factors Influencing the Turnover of United States Air Force Pilots in the Six to Eleven Year Group" employed linear regression to analyze the relationship among eleven determinants and career intent. Their thesis basically was an effort to validate the model proposed by Blackburn and Johnson as it applied to USAF pilots as well as an effort to identify the most statistically significant determinant of turnover. Gulick and Laakman used data from the Officer Exit Survey for October, November, December 1978, and January, February, March 1979 to obtain their sample data. They found assignment policies of the Air Force to be the major factor pushing pilots in the six to eleven year group out of the Air Force (15).

Our thesis was an effort to build on the model provided by Gulick and Laakman with two notable changes (see Fig. 2). First, we analyzed factors affecting not only the turnover of pilots in the six to eleven year group, but navigators as well. Secondly, a larger data base composed of all

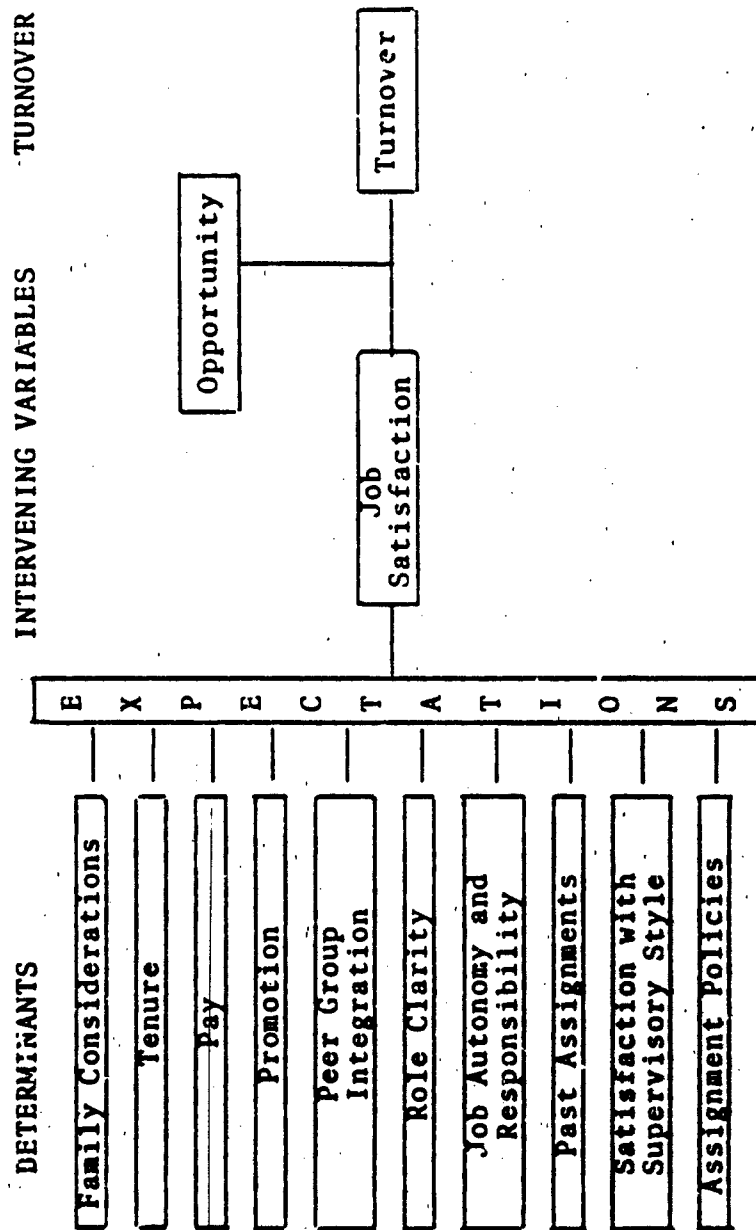


Fig 2. The Gulick-Lagakman Operationalized Model (14:17)

valid Officer Exit Survey replies from pilots and navigators in the six to eleven year group for the period May 1979 through December 1980 was used. The same definitions employed by Gulick and Laakman for the intervening variables and determinants of turnover were duplicated in this thesis and are presented in subsequent paragraphs.

### Intervening Variables

Expectations. Each member of an organization brings certain expectations to his job and overall satisfaction will be determined by the extent to which the rewards provided by his job meet his expectations.

The concept of met expectations may be viewed as the discrepancy between what a person encounters on the job in the way of positive and negative experiences and what he expected to encounter [25:152].

Each individual will perceive his expectations as being met to different degrees.

Job Satisfaction. Job satisfaction has an inverse relationship with turnover; as satisfaction increases, turnover decreases. Job satisfaction is defined as ". . . the degree to which members of a social system have a positive affective orientation toward membership in the system [25:156]."

Opportunity. Opportunity can be viewed as the availability of various alternative job opportunities. In the case of Air Force pilots, for example, the opportunity may exist for employment by the commercial airlines (15:6).

### Determinants of Turnover

Tenure. Tenure is defined as the up-or-out management

system. This was mandated by the Congress in 1947 with the passage of the Officer Personnel Act. The concept has been discussed previously in this thesis and no further discussion is necessary (15:7).

Pay. Pay is defined in this study to include medical and dental benefits, salary, flight pay, annual pay increases due to inflation, retirement benefits, exchange and commissary privileges, and so on (15:8-9).

Promotion. Promotion . . . represents the individual's perceived level of, and equity of, opportunity for upward movement in military rank and/or opportunity for a position within the organization with greater prestige, power, or responsibility [4:38].

Promotion opportunity is a basic component of the military promotion system and is directly related to the up-or-out system while being compounded by Congressional grade and ceiling strengths. Problems in this area have been voiced by Senator Sam Nunn, Chairman of the Senate Armed Services Subcommittee on Manpower Personnel:

. . . many good people are lost to the services because they reach a point at which they are not competitive for promotion but still are highly qualified in their speciality.

There must be a way to keep these people on active duty past the point at which they would be forced out by failure to be promoted. There must be a way to use their skills for a longer span of time [8:39].

Peer Group Integration. Peer group integration is the extent of participation in a cohesive and rewarding work group (25:71).

Role Clarity. Role clarity results from a ". . . close congruence of an individual's expectations and actual

requirements of the job [4:16]."

Job Autonomy and Responsibility. Gulick and Laakman felt both of these factors involved higher order needs such as self-fulfillment.

In the case of pilots the authors believe job autonomy and responsibility are affected by policies dealing with unstable flight schedules, additional duties, long duty hours, lack of opportunities to demonstrate initiative, and lack of authority to carry out responsibilities [15:12].

This definition is kept intact for purposes of this research and is extended to include navigators as well.

Satisfaction with Supervisory Style. This factor is defined as the perception of satisfaction with leadership and supervision.

These aspects include: supervisor has employee interests and those of Air Force at heart; supervisor is approachable and helpful; supervisor has good knowledge of the job [15:13].

Air Force Assignment Policies. Gulick and Laakman proposed using assignment policies and past assignments as determinants of turnover. Assignment policies and past assignments are conceptually similar to the similarity of job interests theme discussed by Blackburn and Johnson. These two determinants of turnover were operationally defined for the purpose of research to mean the Air Force personnel assignment process (15:13).

Family Considerations. Gulick and Laakman also added family considerations as a determinant of turnover. Family considerations include such things as dissatisfaction with family separation and certain financial sacrifices incurred

due to permanent change of station (PCS) assignments. This additional determinant was not included in the conceptual model proposed by Blackburn and Johnson.

#### Problem Statement

The present promotion system can be an irritant to rated officers. There exist career and job uncertainties because of the up-or-out promotion policy. A rated officer may be screened many times during his service life by promotion boards and suddenly be found of no further use to the Air Force simply because the Air Force does not have enough promotions to go around. The whole-man concept and the associated career broadening assignments may also be significant irritants. If a junior rated officer desired to remain in his rated speciality indefinitely, his promotion potential could be affected even if he were an expert in his field. Ideas about retention of rated Air Force personnel are also often tied to the pay package and the erosion of benefits instead of the member's attitudes and feelings.

There exists a need to improve the retention of USAF pilots and navigators with less than eleven years TAFMS. The decision to leave the Air Force depends largely on personal situations and circumstances. This thesis concentrates on the attitudes of those junior officers who have voluntarily separated from the USAF and the significant factors affecting their turnover.

### Hypotheses

Hypothesis 1 -- Tenure is a significant determinant of turnover for USAF pilots and navigators in the six to eleven year group.

Hypothesis 2 -- Pay and benefits is a significant determinant of turnover for USAF pilots and navigators in the six to eleven year group.

Hypothesis 3 -- Promotion is a significant determinant of turnover for USAF pilots and navigators in the six to eleven year group.

Hypothesis 4 -- Peer group integration is a significant determinant of turnover for USAF pilots and navigators in the six to eleven year group.

Hypothesis 5 -- Role clarity is a significant determinant of turnover for USAF pilots and navigators in the six to eleven year group.

Hypothesis 6 -- Job autonomy and responsibility is a significant determinant of turnover for USAF pilots and navigators in the six to eleven year group.

Hypothesis 7 -- Satisfaction with supervisory style is a significant determinant of turnover for USAF pilots and navigators in the six to eleven year group.

Hypothesis 8 -- Past assignments is a significant determinant of turnover for USAF pilots and navigators in the six to eleven year group.

Hypothesis 9 -- Assignment policy is a significant determinant of turnover for USAF pilots and navigators in the

six to eleven year group.

Hypothesis 10 -- Family considerations is a significant determinant of turnover for USAF pilots and navigators in the six to eleven year group.

Hypothesis 11 -- Civilian job opportunity is a significant determinant of turnover for USAF pilots and navigators in the six to eleven year group.<sup>2</sup>

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<sup>2</sup>While civilian opportunity is not a "determinant" of turnover from the model developed by Gulick and Laakman, it was tested to determine if it is a significant factor influencing rated retention.

## CHAPTER II

### RESEARCH DESIGN AND METHODOLOGY

#### Data Gathering Plan

##### The Survey Questionnaire

The instrument used to obtain the necessary data on junior rated officer attitudes is the 1979 United States Air Force Officer Exit Survey (hereinafter referred to as the Exit Survey) that was administered from May 1979 through December 1980. The Exit Survey consisted of 89 questions. The first 13 questions provided demographic information. The remaining 76 questions relate to potential factors affecting the respective officer's decision to leave active duty. A sample of the Exit Survey can be found in Appendix A.

##### Survey Bias

Attitudes reflected by the survey respondents may not be reasonably accurate reflections of the attitudes of the total number of junior rated officers due to nonrespondent bias. The bias could have been introduced if the attitudes and opinions of the nonrespondents were different than those of the junior rated officers who chose to complete and return the Exit Survey. For purposes of comparison between this thesis and the previous study by Gulick and Laakman, it is assumed that there is no difference in the reasons for nonresponse. Any bias

in the sample data of this thesis due to nonrespondents was assumed to be the same as the bias in the set of sample data used by Gulick and Laakman.

In addition, the Exit Survey may be skewed in many cases to show assignment policies as being a primary determinant of turnover. For example, an officer who receives an assignment notification and elects to separate from the Air Force rather than accept the assignment may view assignment policies as one of the top reasons for his separation.

#### Instrument Validity and Reliability

This Exit Survey was constructed by AFMPC, Survey Branch. The instrument is, therefore, assumed valid and reliable by the authors.

#### Description of the Population

This research will concentrate on USAF pilots and navigators with at least six years and less than eleven years TAFMS. Pilots and navigators with less than six years of service are normally still obligated to the Air Force since they would not have completed their service commitment incurred as a result of completion of UFT. Pilots and navigators with more than eleven years of TAFMS have probably been promoted to major and can reasonably be expected to remain in the active force until retirement.

## Variable Definition

### Dependent Variable

In the Blackburn and Johnson Synthesized Model presented in Fig. 1, Chapter I, the dependent variable is the intervening variable of Expectations. The expectation of an individual to make the Air Force a career, expressed career intent, is used as a surrogate measure of turnover (4:49). Each respondent's expressed career intent was measured by his response to Question 12 from the Exit Survey, which read:

Think back to when you were commissioned and began active duty. What was your intent in regard to making the Air Force a career?

The responses to this question were arrayed on a seven-point Likert scale and were given values from 1 (definitely would make the Air Force a career) to 7 (definitely would not make the Air Force a career).

Previous research has indicated that the career intent question is a reliable and accurate predictor of behavior. As cited by Blackburn and Johnson:

Similar questions were used in the Naval Health Research Center and Air Force Human Resources Laboratory studies. These studies indicated that expressed career intent, as measured on a Likert response scale, is a reliable and accurate predictor of behavior [4:49].

### Independent Variables

Questions 20 through 67 utilize a four-point Likert scale which the respondents used to rate each variable as to how much it contributed to their decision to separate from the Air Force. The operational definitions for these variables

in this thesis will be the same as the definitions used by Gulick and Laakman.

Tenure. As operationally defined for this thesis, tenure refers to the up-or-out management system in the Air Force. Tenure was measured by the responses to Questions 47 and 63.

Career uncertainty due to up-or-out management system.

More job security in civilian job.

Pay and Benefits. Pay and benefits includes pay, allowances, medical and dental benefits, commissary and exchange privileges, and the retirement system. The effect of pay and benefits as a contributor to turnover was measured by Questions 20-26 and 60.

General erosion of benefits.

Inadequate medical and dental care for self.

Inadequate medical and dental care for dependent(s).

Actual pay too small.

Flight pay too small.

Annual pay increases too small.

Uncertainty resulting from proposed changes in retirement system.

Higher pay in civilian job (over the long term).

Promotion. Promotion represents the individual's perception of the Air Force promotion system. Promotion was measured by responses to Questions 39-41 and 67.

Controlled OER(s) received in the past.

Other OER(s) received.

Promotion opportunity.

My chances of being promoted.

Peer Group Integration. Peer group integration is operationally defined in this thesis as the satisfaction which a respondent derives from participating with others in his work group, working with other military personnel, and being associated with the military profession. Peer group integration was measured by the responses to Questions 30, 34 and 65.

Low prestige of military profession.

Unhappiness with work group.

Better people to work with in civilian job.

Role Clarity. Role clarity represents the respondent's perception of various aspects of clarity of his task within the organization (15:27). Role clarity was measured by the responses to Questions 32-33, 49-50 and 55.

Not enough flying time.

Unable to fly during entire career.

Requirement for career broadening assignment(s).

Policies/procedures which determine stature of an officer.

Job Autonomy and Responsibility. Job autonomy and responsibility deals with the respondent's perception of the amount and responsibility allowed on his job and includes the extra responsibilities acquired by the respondent as a result of flight scheduling and additional duties. Job autonomy and responsibility were measured by Questions 27-29, 31, 48, 53-54 and 64.

Duty hours too long.

Unstable flight schedule.

Too many additional duties.

Too much ancillary training.

Too many petty restrictions.

Lack of opportunity to demonstrate initiative.

Inadequate authority to carry out responsibilities.

More freedom and independence in decision-making in civilian job.

Satisfaction with Supervisory Style. Satisfaction with supervisory style was measured by responses to Questions 35-36, 51 and 52.

Supervision and leadership at the unit/squadron level.

Supervision and leadership above unit/squadron level.

Lack of adequate recognition.

Too many inspections.

Past Assignments. Past assignments represent the measurement of how previous assignments influenced the decision to leave the Air Force. Past assignments was measured by Questions 44 and 45.

Unsatisfactory aircraft/job assignment(s) in the past.

Unsatisfactory location of assignment(s) in the past.

Assignment Policies. Assignment policies represents the degree to which present assignment policies influenced pilots' decisions to leave the service. Assignment policies' effect on turnover was measured by the responses to Questions 42-43 and 46.

Little say in future assignments.

Inability to cross-train from one weapon system to another.  
Unsatisfactory future assignment(s).

Family Considerations. This determinant was used to ascertain the degree of influence that family considerations play in the turnover decision. The questions used to measure this determinant were 37-38, 56-57, 62 and 66.

Excessive family separation due to TDY.

Excessive family separation due to PCS.

Spouse's job opportunity/income.

Lack of family acceptance of Air Force way of life.

More geographic stability in civilian job.

Less family separation in civilian job.

### Statistical Analysis

#### Sampling Plan

This thesis gathered and used the data collected by the Exit Survey from May 1979 through the end of December 1980. All officers requesting a date of separation (DOS) during this time frame would have had an equal opportunity to accomplish and return the Exit Survey. Stratified random sampling was applied in this thesis. The population under study was divided into two subgroups: pilots and navigators. Gulick and Laakman only studied the effect of the independent variables on pilot turnover. We extended this effort to study the effect of the independent variables on USAF navigators as well.

The sample of pilots consisted of 526 members of the targeted population who responded to the Exit Survey. A

data-producing sample of 410 pilots was obtained by eliminating all respondents who failed to answer questions required for this study. A data-producing sample of 130 navigators was obtained in a similar manner from an original sample of 178 navigators.

### Statistical Test

The first step after receiving the data from AFMPC was to separate the responses according to whether the respondent was a navigator or a pilot. A value for Question 12 and a value for the ten independent variables was then computed. The responses used to measure the independent variable took their values from the four-point Likert scale. The value of each separate independent variable was the computed mean of the values of the response questions used to measure their respective independent variable.

The statistical test of regression analysis was used since it offers a method for determining relationships between two or more variables. The methodology is well documented. In fact, there are several computer programs which have been written to adapt the linear regression model to a given set of data. The computer programs used in this thesis were the regression procedure contained in the Statistical Package for the Social Sciences (SPSS) (20:343).

The regression model the authors used was:

$$Y_i = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \beta_3 X_{i3} + \beta_4 X_{i4} + \beta_5 X_{i5} \\ + \beta_6 X_{i6} + \beta_7 X_{i7} + \beta_8 X_{i8} + \beta_9 X_{i9} + \beta_{10} X_{i10} + \epsilon_i$$

where

$i = 1, \dots, n$

$Y_i$  is the observed value of the response to Question 12 of the  $i^{\text{th}}$  observation (expectations)

$X_{i1}, X_{i2}, X_{i3}, \dots, X_{i10}$  are the computed values of the independent variables (determinants of turnover)

$\beta_0, \beta_1, \beta_2, \dots, \beta_{10}$  are regression coefficients, and

$\epsilon_i$ 's are the error terms

Since the previous thesis effort by Gulick and Laakman used a .05 level of significance upon which to base their statistical analysis, it was felt this was an appropriate significance level to maintain for this thesis (15:35). This not only maintained a high degree of reliability, but aided in the cross-evaluation of the data between the separate theses.

#### Regression Coefficient, $\beta$

There is no relation between X and Y when  $\beta_1 = 0$ . Thus, a test whether or not  $\beta_1 = 0$  for each independent variable for the model is equivalent to testing whether or not a relationship exists between  $X_1$  and Y. If it can be shown with the preselected .05 level of significance that each regression coefficient is not equal to zero,  $\beta_1 \neq 0$ , then it can be concluded that the associated independent variable  $X_1$  should be included in the model.  $\beta_1$  indicates the expected change in

the mean value of Y when  $X_{ij}$  increases by one unit while the remaining independent variables remain constant.

#### Coefficient of Determination, $R^2$

The coefficient of determination is one measure of the usefulness of the regression relation. In general:

$$0 \leq R^2 \leq 1$$

where a value of zero implies that there is no statistical relation exhibited between the independent variables. A value of one implies a perfect linear relation. Usually,  $R^2$  falls somewhere between zero and one; the closer  $R^2$  is to one, the greater is the degree of linear statistical relation in the observations (19:458). Gulick and Laakman proposed an estimated regression function with  $R^2$  value of .98346 (15:37). Blackburn and Johnson noted that previous research concerning job satisfaction and turnover had indicated that an  $R^2$  of 0.10 or better can be considered to have practical importance (4:59).

#### Residuals

The difference between an observed value  $Y_i$  and the fitted value  $\hat{Y}$  is called the residual. The aptness of the regression model was tested by residual analysis. The residuals were analyzed for randomness, normality, constancy of error variance, and appropriateness of the regression function (19:500).

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### Research Assumptions

The following assumptions apply to this research:

1. There is a linear relationship between the independent variables and the dependent variable.
2. The survey instrument is a reasonably valid and reliable tool.
3. The set of sample data is representative of the desired population.
4. Every respondent assigns the same degree of opinion to each level on the Likert scale. In other words, a response of 7 to Question 12 would indicate the same degree of dissatisfaction among all the respondents.

### Research Limitations

The following limitations apply to this research:

1. Findings are limited to application to the attitudes of those junior rated officers who left active duty during the time frame for which this thesis was able to collect data.
2. Research was limited to information made available by AFMPC.
3. It is not possible to consider all of the variables which may be considered reasons for a respondent's attitudes and feelings. The value of  $R^2$  which will be found is limited by the number of independent variables considered in this study.

## CHAPTER III

### DATA ANALYSIS RESULTS USING PILOT RESPONSES

#### Introduction

The basic framework and operational definitions used in the data analysis were presented in Chapter II of this thesis. This chapter presents the results of the analysis of data pertaining to USAF pilots in the six to eleven year group in terms of the research objectives in Chapter I. Chapter IV presents a similar analysis of data pertaining to USAF navigators in the six to eleven year group.

As previously mentioned, the survey instrument used was the Exit Survey. Data from this survey were provided by AFMPC, Survey Branch, for the period May 1979 through December 1980. This chapter is divided into two major sections. The first section contains summary results that depict the mean response on a four-point Likert scale for each determinant of turnover. The multiple linear regression results pertinent to the research objectives with a brief explanation is presented in the following section of the chapter.

#### Data Analysis

##### Mean Response Results

The data provided for this thesis allowed the authors

to review and consider on a case-by-case basis the responses of USAF pilots in the six to eleven year group. The mean response results consisted of considering each individual respondent's reply to Questions 20-67 and grouping the various questions to measure the intervening variable opportunity and the determinant variables, tenure, pay and benefits, promotion, peer group integration, role clarity, job autonomy, satisfaction with supervisory style, past assignments, assignment policies, and family considerations.

The specific format of the data base provided for this thesis consisted of responses on a Likert scale of 0 to 3. On the four-point Likert scale, a value of 0 equates to no contribution to the decision to leave the Air Force; a value of 1 equates to a minor contribution; a value of 2 equates to a moderate contribution; and a value of 3 equates to a major contribution. A total of 526 pilots completed and returned the Exit Survey. From this total, 410 were considered valid and incorporated into this analysis. An individual case file was considered invalid if a respondent replied with an invalid response to Question 12 or any question between 20 and 67 on the Exit Survey. The mean response results are contained in Table IV.

Opportunity. The intervening variable, opportunity, was measured by Questions 58-59 and 61 from the Exit Survey. These questions were highlighted in Chapter II and will not be listed again. The responses to these three questions were arrayed on a scale of 0 to 3 as mentioned above. Each question

TABLE IV  
Contribution to Turnover (Pilots)

	-0- NO CONTRIBUTION	-1- MINOR	-2- MODERATE	-3- MAJOR
Opportunity	+++++			
Tenure	+++++			
Pay and Benefits	+++++			
Promotion	+++++			
Peer Group Integration	+++++			
Role Clarity	+++++			
Job Autonomy	+++++			
Satisfaction with Supervisory Style	+++++			
Past Assignments	+++++			
Assignment Policies	+++++			
Family Considerations	+++++			

received equal weight and a value for opportunity was obtained by summing the responses and, in turn, dividing by the number of questions. In this case the sum was divided by three. This same procedure was used to measure the value of the ten determinants in the model. The mean value obtained for opportunity was 1.771. Opportunity represents external factors that contribute to an individual's electing to separate from an organization. The mean response indicates that opportunity had between a minor and a moderate contribution to turnover

among those USAF pilots surveyed.

Tenure. Tenure was measured by the responses to Questions 47 and 63. As previously mentioned, tenure is viewed as the up-or-out management system in the Air Force. The mean value obtained for this determinant variable, tenure, was 1.673, indicating that tenure policies were between a minor and a moderate contributor to turnover.

Pay and Benefits. The determinant pay and benefits was measured by Questions 20-26 and 60. The responses, arrayed on the four-point scale, yielded a mean response of 1.866. This indicates that the general area of pay and benefits was between a minor and moderate contributor to the turnover of USAF pilots completing the Exit Survey. Pay and benefits includes pay, allowances, medical and dental benefits, commissary and exchange privileges, and the retirement system.

Promotion. The determinant variable promotion was measured by the responses to Questions 39-41 and 67. The mean response obtained was 1.112, indicating that the effectiveness of the Air Force promotion system was perceived as slightly above the minor contribution level to the turnover decision.

Peer Group Integration. Peer group integration, the satisfaction which a respondent derives from participating with others in his work group, was measured by responses to Questions 30, 34 and 65. The mean response of 1.094 indicates this determinant variable to be slightly above the minor contribution level to the turnover decision.

Role Clarity. The determinant variable role clarity was measured by the responses to Questions 32-33, 49-50 and 55. Role clarity, which represents the respondent's perception of various aspects of clarity of his task within the organization, yielded a mean response of 1.409, indicating role clarity is between a minor and a moderate contributor to the turnover decision.

Job Autonomy. Job autonomy is the amount and responsibility allowed on the job to include the extra responsibilities acquired as a result of flight scheduling and additional duties. This determinant was measured by the responses to Questions 27-29, 31, 48, 53-54 and 64. The mean response for job autonomy was 1.480, indicating that it was between a minor and moderate contributor to the turnover decision.

Satisfaction with Supervisory Style. This determinant variable refers to the perception of satisfaction with leadership and supervision held by those pilots completing the Exit Survey. Questions 35-36, 51 and 53 were used to measure this variable and a mean response of 1.509 was obtained. This indicates that satisfaction with supervisory style was between a minor and a moderate contributor to the turnover decision.

Past Assignments. This determinant of turnover was measured using Question 44 and 45, and represented the measurement of how previous assignments had contributed to the decision to leave the Air Force. A mean response of 0.806 was obtained, indicating this was less than a minor contributor

to the turnover decision.

Assignment Policies. Assignment policies, measured by Questions 42-43 and 46, is the degree to which present assignment policies influenced pilots' decisions to leave the Air Force. A mean response of 2.038 was obtained. This indicates that assignment policies are between a moderate and a major contributor to the turnover decision.

Family Considerations. This determinant refers to the degree of influence that family considerations play in the turnover decision. It was measured using Questions 37-38, 56-57, 62 and 66. A mean response of 1.151 was obtained, indicating this determinant was between a minor and a moderate contributor to the turnover decision.

#### Multiple Linear Regression

The synthesized model presented in Chapter I (Fig. 2) formed the basis for the research hypothesis of this study. The computerized Statistical Package for the Social Sciences (SPSS) was used in analyzing the survey data. Regression analyses were accomplished utilizing the subroutine REGRESSION. The multiple linear regression results pertinent to the research objectives are presented with an explanation. Each research hypothesis is restated and the regression results pertaining to that hypothesis are presented. In each instance, the null hypothesis was tested at the .05 level of significance. The multiple linear equation was considered valid if an overall  $R^2$  value of .10 or better was obtained. As previously stated,

past research in this area has demonstrated that an  $R^2$  of .10 or better can be considered to have practical importance.

#### Multiple Linear Regression Results

Hypotheses 1 through 11, presented in Chapter I, pertain to the ten determinants and the intervening variable opportunity, and their effect upon turnover among USAF pilots in the six to eleven year group. The multiple linear regression model is expressed as an equation in Appendix B. The  $R^2$  obtained for the model was 0.10904 and is greater than the required  $R^2$  of .10 used as a criteria for accepting or rejecting the linear regression model.

The results of the regression analysis from the computer output are summarized in Table V. The null hypothesis ( $H_0$ ) for the research hypotheses presented in Chapter I is that the pertinent variable is not directly related to expectations (measured by Question 12 from the Exit Survey). That is:

$$H_0: \beta_i = 0$$

$$H_1: \beta_i \neq 0$$

where  $\beta$  is the regression coefficient.

Each tabulated F-statistic from the regression analysis computer output was compared to a critical F-value of 3.84. A tabulated F-statistic greater than 3.84 implied the null hypothesis be rejected.

#### Hypothesis Testing

The first hypothesis--tenure is a significant

TABLE V  
Regression Analysis Results for Pilots With Career  
Intent (Question 12) as the Dependent Variable

Determinant	B Value	F
Tenure	0.08932	0.987
Pay and Benefits	-0.33194	5.702
Promotion	-0.08546	0.714
Peer Group Integration	0.18533	2.121
Role Clarity	0.15176	1.116
Job Autonomy	0.08329	0.229
Satisfaction with Supervisory Style	-0.52557	15.507
Past Assignments	0.05353	0.337
Assignment Policies	-0.24013	5.586
Family Considerations	-0.21832	3.429
Opportunity	0.33380	8.420

determinant of turnover--was not supported by the research data. The tabulated F-statistic of 0.987 is less than the required critical F-value of 3.84. Therefore, we accept the null hypothesis and conclude the relationships between tenure and expectations is not statistically significant ( $\beta_1 = 0$ ).

The second hypothesis--pay and benefits is a significant determinant of turnover--was supported by the research data. The tabulated F-statistic of 5.702 is greater than the required critical F-value of 3.84. Therefore, we reject the null hypothesis and accept  $H_1$  that  $\beta_2 \neq 0$ . The relationship between pay and benefits and expectations is statistically significant.

The third hypothesis--promotion is a significant determinant of turnover--was not supported by the research data. The tabulated F-statistic 0.714 is less than the required critical F-value of 3.84. Therefore, we accept the null hypothesis and conclude the relationship between promotion and expectations is not statistically significant.

The fourth hypothesis--peer group integration is a significant determinant of turnover--was not supported by the research data. The tabulated F-statistic of 2.121 is less than the required critical F-value of 3.84. Therefore, we accept the null hypothesis and conclude the relationship between peer group integration and expectations is not statistically significant.

The fifth hypothesis--role clarity is a significant determinant of turnover--was not supported by the research

data. The tabulated F-statistic of 1.116 is less than the required critical F-value of 3.84. Therefore, we accept the null hypothesis and conclude that the relationship between role clarity and expectations is not statistically significant.

The sixth hypothesis--job autonomy and responsibility is a significant determinant of turnover--was not supported by the research data. The tabulated F-statistic of 0.229 is less than the required critical F-value of 3.84. Therefore, we accept the null hypothesis and conclude that the relationship between job autonomy and expectations is not statistically significant.

The seventh hypothesis--satisfaction with supervisory style is a significant determinant of turnover--was supported by the research data. The tabulated F-statistic of 15.507 is greater than the required critical F-value of 3.84. Therefore, we reject the null hypothesis and accept  $H_1$ . The relationship between satisfaction with supervisory style and expectations is statistically significant.

The eighth hypothesis--past assignments is a significant determinant of turnover--was not supported by the research data. The tabulated F-statistic of 0.337 is less than the required critical F-value of 3.84. Therefore, we accept the null hypothesis and conclude that the relationship between past assignments and expectations is not statistically significant.

The ninth hypothesis--assignment policies is a significant determinant of turnover--was supported by the research

data. The tabulated F-statistic of 5.586 is greater than the required critical F-value of 3.84. Therefore, we reject the null hypothesis and accept  $H_1$ . The relationship between assignment policies and expectations is statistically significant.

The tenth hypothesis--family considerations is a significant determinant of turnover--was not supported by the research data. The tabulated F-statistic of 3.429 is less than the required critical F-value of 3.84. Therefore, we accept the null hypothesis and conclude that the relationship between family considerations and expectations is not statistically significant.

The eleventh hypothesis--civilian job opportunity is a significant determinant of turnover--was supported by the research data. The tabulated F-statistic of 8.420 is greater than the required critical F-value of 3.84. Therefore, we reject the null hypothesis and accept  $H_1$ . The relationship between civilian job opportunity and expectations is statistically significant.

#### Aptness of the Linear Regression Model

A determination of the aptness of the linear regression model was performed through examination of the residuals obtained from the computer output by the utilization of the SPSS subroutine REGRESSION. As previously mentioned, a residual is a deviation of an observed  $Y_i$  from an estimated  $\hat{Y}_i$  value (see Appendix B). In regression analysis, residuals are

measures of the error component,  $\epsilon_i$ . Possible violations of the underlying assumptions of regression analysis were evaluated through an examination of a plot of all residuals. An examination of this plot for the research data used in this thesis suggested that the error variances were approximately equal. The plot suggested that the assumption of linearity was reasonably valid since estimated values scattered randomly around a straight fitted line.

An examination of the plot of the standardized residual indicated that the distribution of the error terms was normal with a mean of zero. Hence, the analysis of the residuals revealed that the hypothesized regression model (see Appendix B) was valid.

#### Summary and Comparison

The contribution to turnover of the intervening variable, opportunity, and the ten determinants was presented in Table IV. While the mean responses obtained for these factors by Gulick and Laakman were arrayed on a ten-point Likert scale as opposed to the four-point Likert scale employed in this thesis, there is a striking similarity between the results of the two theses. For example, this thesis also found that assignment policies of the Air Force had the highest mean response as far as being a contribution to turnover.

While the Gulick and Laakman thesis sought to determine the most statistically significant determinant to the turnover decision, this thesis did not attempt to rank order

the factors. Rather, we demonstrated statistically through use of multiple linear regression what the most significant determinants are that affect the turnover of USAF pilots in the six to eleven year group. This thesis found that opportunity, pay and benefits, satisfaction with supervisory style, and assignment policies were statistically the most significant determinants of turnover.

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CHAPTER IV  
DATA ANALYSIS RESULTS USING NAVIGATOR  
RESPONSES

Introduction

This chapter presents the results of the analysis of data pertaining to USAF navigators with between six and eleven years TAFMS. As previously mentioned, the Exit Survey was the survey instrument used to perform this analysis. The same intervening variable of opportunity and the ten determinants of turnover cited in previous chapters were employed in this analysis of turnover among navigators. The methods of analysis performed in Chapter III pertaining to USAF pilots were used to analyze the responses of USAF navigators. As previously mentioned, the sample of navigators used in this study was 130 of the 178 navigators who completed and returned the Exit Survey from May 1979 through December 1980.

Data Analysis

Mean Response Results

The opinions expressed by USAF navigators in the six to eleven year group regarding the degree to which separate determinants affected their ultimate decision to leave the Air Force are presented in Table VI.

For each of the 130 respondents who completed a survey,

TABLE VI  
Contribution to Turnover (Navigators)

	-0- NO CONTRIBUTION	-1- MINOR	-2- MODERATE	-3- MAJOR
Opportunity	+++++			
Tenure	+++++			
Pay and Benefits	+++++			
Promotion	+++++			
Peer Group Integration	+++++			
Role Clarity	+++++			
Job Autonomy	+++++			
Satisfaction with Supervisory Style	+++++			
Past Assignments	+++++			
Assignment Policies	+++++			
Family Considerations	+++++			

a value was calculated to determine the contribution each determinant made toward an individual's decision to leave the Air Force. This value was the mean value of the questions previously mentioned that were used as measures of each determinant. A value of 0 indicated that a factor made no contribution toward influencing the decision to leave the Air Force. A value of 1, 2, or 3 indicated that the determinant made either a minor, moderate, or major contribution, respectively. Subsequently, the mean value for each determinant for the

entire sample of 130 completed surveys was calculated.

Assignment policies was the only determinant that made between a moderate and a major contribution to the decision to leave the Air Force. The other determinants, with the exception of peer group integration and past assignments, made between a minor and a moderate contribution to the turnover decision. Peer group integration and past assignments were slightly less than a minor contributor to the turnover decision. No one determinant was ranked as having made a major contribution to the decision to leave the Air Force.

#### Multiple Linear Regression

The synthesized model presented in Chapter I (Fig. 2) formed the basis of the research hypotheses of this analysis of USAF navigators in the six to eleven year group. The computerized Statistical Package for the Social Sciences (SPSS) was used in analyzing the survey data. Multiple regression analyses were accomplished using the subroutine REGRESSION.

#### Multiple Linear Regression Results

The hypotheses tested in Chapter III pertaining to research data on pilots are identical to those tested against research data on navigators and will not be repeated in this chapter. The same multivariate linear regression model as expressed in equation form in Appendix B also applies. The multiple linear regression results from the computer output are presented in Table VII.

The overall  $R^2$  obtained for this model was 0.24860,

**TABLE VII**  
**Regression Analysis Results for Navigators with**  
**Career Intent (Question 12) as the Dependent**  
**Variable**

<b>Determinant</b>		
<b>Tenure</b>	<b>-0.10623</b>	<b>0.425</b>
<b>Pay and Benefits</b>	<b>-0.54994</b>	<b>6.562</b>
<b>Promotion</b>	<b>-0.07712</b>	<b>0.136</b>
<b>Peer Group Integration</b>	<b>0.37416</b>	<b>3.157</b>
<b>Role Clarity</b>	<b>0.43549</b>	<b>2.810</b>
<b>Job Autonomy</b>	<b>0.43336</b>	<b>2.523</b>
<b>Satisfaction with Supervisory Style</b>	<b>-0.54177</b>	<b>5.037</b>
<b>Past Assignments</b>	<b>0.27907</b>	<b>3.268</b>
<b>Assignment Policies</b>	<b>-0.52985</b>	<b>8.170</b>
<b>Family Considerations</b>	<b>0.27137</b>	<b>2.357</b>
<b>Opportunity</b>	<b>-0.06326</b>	<b>0.096</b>

which is greater than the required  $R^2$  of 0.10 that was used as a criteria for accepting or rejecting the overall linear regression model.

As previously stated, the null hypothesis ( $H_0$ ) for the research hypotheses presented in Chapter I is that the pertinent independent variable is not directly related to expectations (measured by Question 12 from the Exit Survey). In each instance, the null hypothesis was tested at the .05 level of significance. This is the same level of confidence we employed in Chapter III analyzing the responses of USAF pilots.

The tabulated F-statistic from the regression analysis computer output (Table VII) for each determinant was compared to a critical F-value of 3.92. This critical F-value is different than the one used in Chapter III because the sample size of navigator responses was smaller than the sample size of pilot responses. A tabulated F-statistic greater than 3.92 implied that the null hypothesis ( $H_0$ ) be rejected and  $H_1$  accepted. Acceptance of  $H_1$  implies that the relationship between the respective determinant and expectations is statistically significant. In other words, acceptance of  $H_1$  implies that the respective determinant is statistically a significant determinant influencing the turnover of USAF navigators in the six to eleven year group.

A review of the multiple linear regression output in Table VII reveals that pay and benefits, satisfaction with supervisory style, and assignment policies were the only

statistically significant determinants influencing the turnover of USAF navigators in the six to eleven year group. Based on the tabulated F-statistic, it was determined that the other determinants were not statistically significant at the .05 level of significance. As such, they were not considered significant factors influencing the turnover of USAF navigators in the six to eleven year group.

#### Aptness of the Linear Regression Model

Analyses of the residuals pertaining to the research data concerning navigators was accomplished. The plot of the residuals for the data suggests that the error variances are approximately equal. Additionally, the plot of the residuals also suggests that the assumption of linearity is reasonably valid as the observations scatter at random around a straight fitted line. An examination of the plot of the standardized residuals also indicated that the distribution of the error terms are normal with a mean of zero.

The analyses of the residuals obtained from the SPSS computer output revealed that the regression model hypothesized in Chapter II was apt.

#### Summary and Comparison

Among USAF navigators in the six to eleven year group, the mean response results presented in Table VI reveal that assignment policies was the only determinant between a moderate and a major contribution to the decision to leave the Air

Force. This is identical to the results presented in Chapter III of this thesis concerning those USAF pilots from the same year group. It is also the same result obtained by Gulick and Laakman in their thesis effort. A comparison of the mean response for each determinant for navigators in this study versus the mean response for those pilots surveyed for our research indicated that navigators and pilots tended to rate the determinants to turnover in a similar manner.

Statistically, the factors influencing those navigators surveyed for this research were pay and benefits, assignment policies, and satisfaction with supervisory style. Opportunity was not a statistically significant determinant influencing the turnover decision among navigators as it was among those pilots surveyed for this research. We attribute this to the predominant influence of the commercial airline industry's hiring of pilots.

## CHAPTER V

### DISCUSSION, RECOMMENDATIONS AND CONCLUSIONS

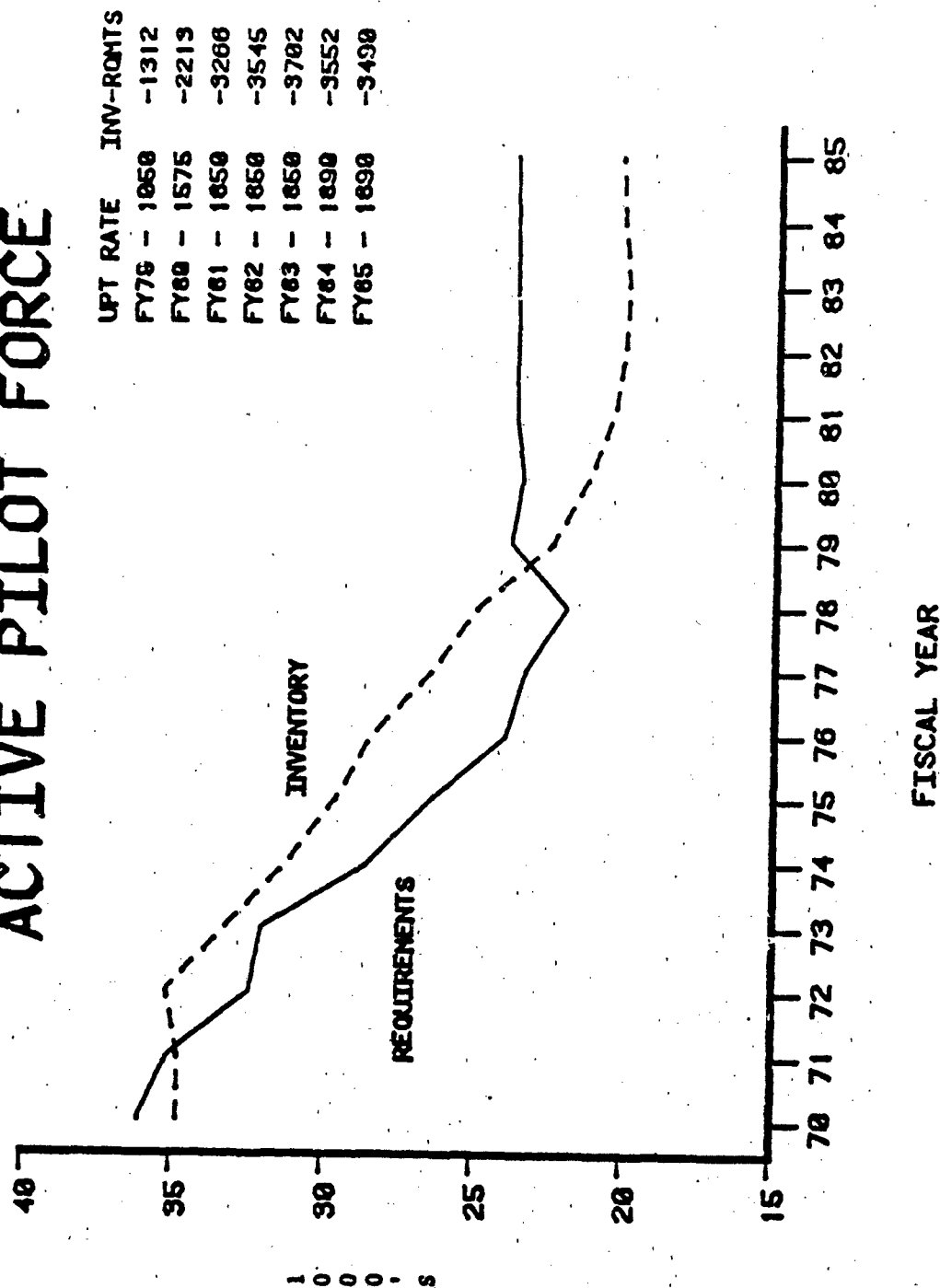
#### Introduction

One of the challenges facing the Air Force as a whole is to improve retention within the rated force and overcome the deficits currently being experienced in the pilot and navigator career fields. Figures 3 and 4 highlight the current and projected deficits for the rated force. In the words of General Lew Allen, Jr., Chief of Staff, United States Air Force:

. . . retaining quality people has never been more critical for us. Preserving experience levels is absolutely essential if we are to maintain an adequate state of readiness [1:49].

The thread of this thesis has been to determine the significant factors affecting the decision of USAF pilots and navigators in the six to eleven year group to leave active duty. Our data encompassed responses to the Exit Survey from pilots and navigators from May 1979 through December 1980. During this same period, 2,264 pilots and 641 navigators elected to separate from the Air Force (5). These numbers reflect voluntary separations with voluntary retirements excluded.

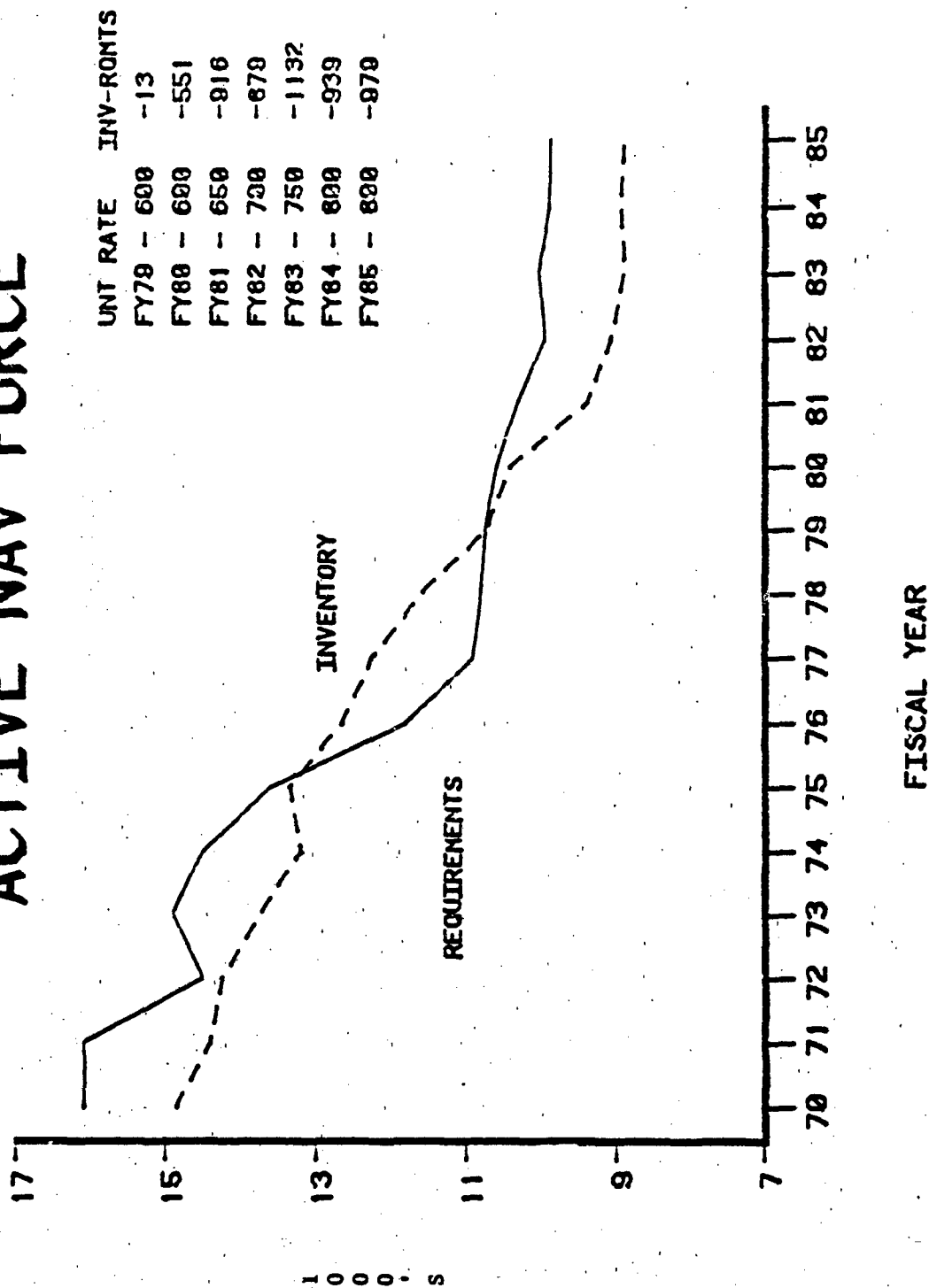
# ACTIVE PILOT FORCE



SOURCE: RONTIS-USA F FINAL FY81-84 PON - 21MAY79  
INV-AF/NPPPP/JULY76-JUNE79 CONTINUATION RATES

Fig 3. Active Pilot Force [38]

# ACTIVE NAV FORCE



SOURCE: USAF FINAL FY81-84 POM - 21 MAY 78

Fig 4. Active Navigator Force [38]

The accuracy that can be achieved in the measurement of attitudes is limited. At the same time, these attitudes cannot be ignored. An attempt to survey and measure the attitudes of United States Air Force rated personnel is essential in determining factors or possible contributors affecting turnover. It must also be recognized that when dealing with sociological research, the results reflect values and perceptions at a single point in time. The attitudes and behaviors of an individual are dynamic and subject to change over time.

#### Analysis Summary

As a result of the statistical analyses of Chapters III and IV, the following relationships were confirmed. A pilot with more than six years but less than eleven years TAFMS had expectations that were not being met by the Air Force. These discrepancies have prompted his decision to separate from the Air Force. Among several factors studied, pay and benefits, opportunity, satisfaction with supervisory style, and assignment policies were found to be statistically significant factors affecting the turnover of USAF pilots. In other words, the association between these factors and expectations was greater than a chance occurrence. We also found navigators in the same year groups had expectations which were not being met. Pay and benefits, satisfaction with supervisory style, and assignment policies were also found to be statistically significant factors affecting the turnover of navigators in the Air Force. Although navigators varied on some issues when

comparing the mean response of the determinants of turnover for navigators versus pilots, they were basically in concurrence with pilots concerning the factors they felt most affected their decision to leave the Air Force.

The data collection instrument employed in this research was not specifically designed to test the variables listed in this study. However, the researchers felt that the data base that resulted from the Exit Survey could be used to investigate and test the theoretical models presented in Chapter I.

### The Air Force Response

#### External

Typically, the Air Force response to retention efforts has been to concentrate in the area of pay and benefits. Legislation had been enacted within the previous twelve-month period to improve the general pay and benefits of military members. For example, the Defense Authorization Bill, signed into law 8 September 1980, provided for an 11.7 percent, across-the-board increase in basic pay and an increase in Continental United States (CONUS) per diem rates. The OGLA-Nunn/Warner Bill, signed into law 8 September 1980, provided for a 25 percent increase in officer and enlisted flight pay, raised the basic allowance for subsistence (BAS) by 10 percent as of 1 September 1980; and created a CONUS variable housing allowance to help defray the costs associated with living in non-government family quarters (7:16).

Additionally, a \$32.6 billion increase in defense spending, to include a 5.3 percent pay raise effective 1 July 1981 and an additional 9.1 percent raise effective 1 October 1981 has been proposed by Secretary of Defense Caspar Weinberger (27:4). The Secretary of Defense told the Senate Armed Services Committee that in addition to the pay raises, the Reagan Administration would like \$245 million in fiscal year (FY) 1981 and \$893 million in FY 1982 to improve the quality of life of military personnel.

Although funds have not been appropriated by the Congress, Department of Defense Directive 1340.14, dated 16 January 1981, establishes Department of Defense (DoD) policies concerning the payment of a continuation bonus to aviation career officers who agree to extend their period of active duty (36:1). Entitled Special Pay for Aviation Career Officers Extending Period of Active Duty, the DoD policy is that the continuation bonus shall be used where shortages of qualified officers in aviation specialties exist, or are projected. The directive further states the continuation bonus shall be limited to critical retention points where the bonus can be expected to affect retention (36:2).

The continuation bonus plan for aviation career officers submitted by the Air Force to Congress would recognize pilots and navigators with six to fifteen years of aviation service as eligible. The largest bonuses would go to the more junior officers making the longest commitment (11:1). Table VIII shows the continuation bonus schedule submitted by the

TABLE VIII  
Continuation Bonus Schedule

Years of Aviation Service	Bonus Per Year Length of Agreement		
	2 yrs.	3 yrs.	4 yrs.
More than 6 Less than 10	\$3600	\$4200	\$4800
More than 10 Less than 12	2600	3200	3800
More than 12 Less than 14	1800	2400	3000
More than 14 Less than 16	1200	1800	2400

**Air Force.**

The Air Force plan is based on years of aviation service. For example, a young rated officer with more than six but less than ten years of aviation service could receive bonuses of \$3600, \$4200, and \$4800, respectively, for two, three, and four-year extensions of his service commitment (11:9). The continuation bonus is not designed to be a permanent benefit, and improvement in pilot and navigator retention could result in payment reduction or elimination. According to Deputy Defense Secretary Frank C. Carlucci:

We have developed a DoD program which will serve to reduce our aviator shortages. This program will concentrate the use of the pay in the retention-intensive years of aviation service. . . [11:9].

Senior Air Force leadership has devoted much effort to winning Congressional approval of increased benefits for

service members. Although full pay comparability for some specific skills, such as pilots, may never be achieved, the authors feel positive steps have been taken and the future definitely looks brighter. But increased pay is not the only answer to the retention problem. Neither is it a problem that lends itself to a permanent solution. Pay has concerned military officers since the Newburgh Address in 1781, when disgruntled officers demanded that Congress give them back pay that was due to them (16:16). Pay problems will probably continue to exist into the future, but recent steps toward military-civilian pay comparability has, at least temporarily, increased the attractiveness of military service, according to AFMPC officials (22). AFMPC officials contend that job responsibility, challenge, and the call to patriotism will counterbalance any remaining financial discrepancy (22).

### Environment

The Air Force could idly hope that the above contention will hold true. This hope must, however, be tempered with certain realizations. For example, there are certain conditions in the environment in which the Air Force operates over which it has no real control. For instance, forecasts show that the airlines could potentially hire 19,000 pilots over the next ten years (14). As Fig. 5 shows, this number will exceed the total Air Force and Navy separation eligibles for the same time frame. Historically, USAF pilot retention rates appear to be related to commercial airline hiring (see Fig 6).

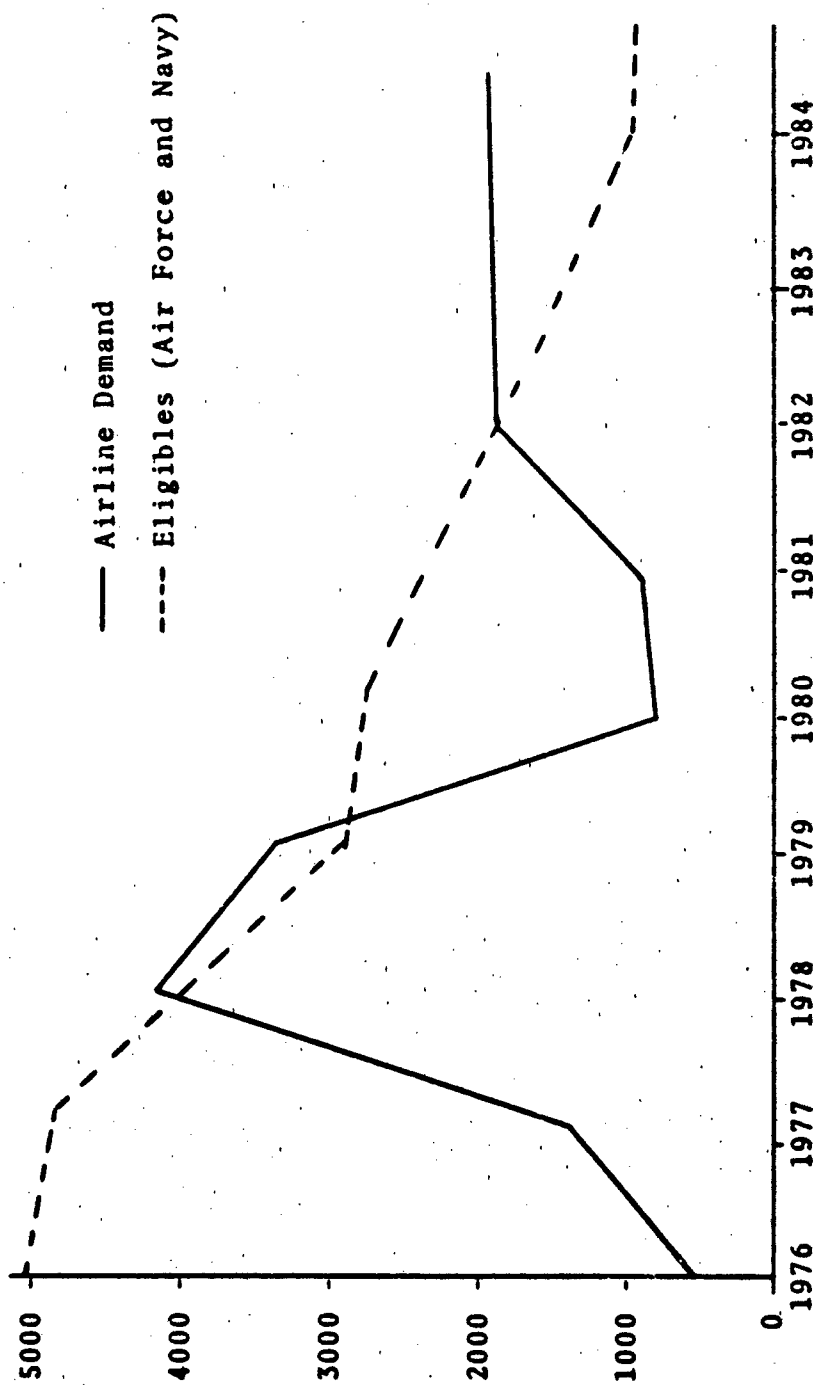


fig 5. Airline Demand vs Separation Eligibles [14]

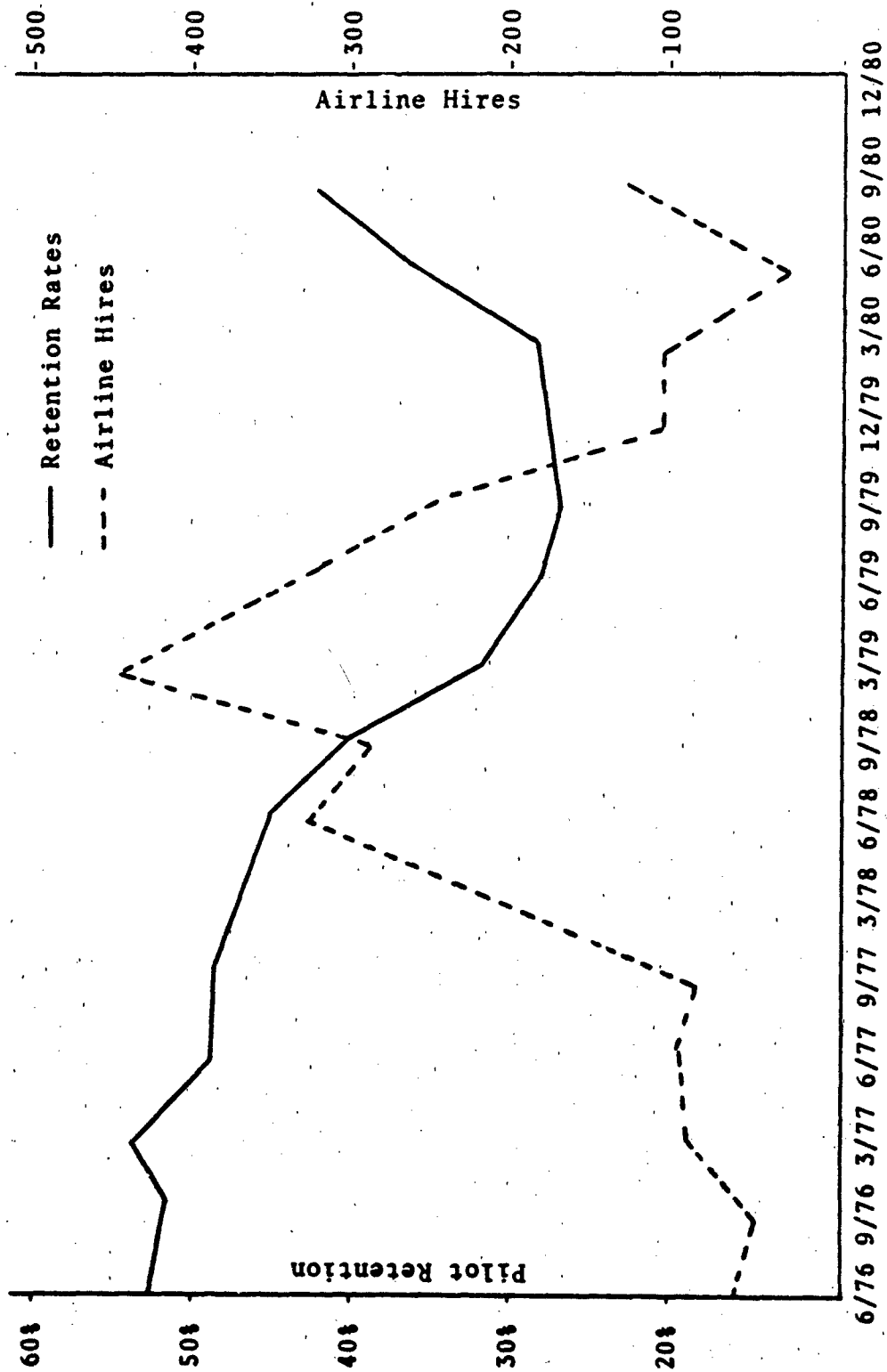


Fig 6. USAF Pilot Retention Rates vs Airline Hires [14]

Obviously, the Air Force cannot compete dollar for dollar with private industry, which may decide to bid for the Air Force pilot or navigator resource. On the other hand, the Air Force could increase its efforts to promote the Air Force "way of life" theme. These efforts must encompass more than merely manufacturing red, white and blue bumper stickers.

The Air Force "way of life" should be promoted not only to potential Air Force members during the recruitment process, but also to its active duty rated force as well. One key is for the Air Force to continue "recruiting" active duty members before the civilian job market "recruits" them into its perceived greener pastures. A need exists to highlight the many benefits not directly related to monetary compensation, such as base officer clubs, recreational facilities, and inexpensive childcare and preschool facilities available to the rated officer and his family. The schooling and training opportunities open to the rated officer also need to be highlighted. Educational opportunities for industry managers, after being hired, are markedly less. On the average, a civilian manager accumulates approximately twenty weeks of development training from the time he finishes college until the time he becomes a corporation president (18:23).

Comments from officers returning to active duty via the Reserve Recall Program emphasize the value of the Air Force "way of life." The Reserve Recall Program was approved in June 1978. Air Force Reserve and Air National Guard officers who apply and are otherwise qualified for duty may be

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recalled to active duty. Among the officers who have returned to active duty via this program and who were contacted by AFMPC to ascertain what prompted them to return to the Air Force, varying comments were received (29, 30). 'A person may work for some companies for five years before becoming eligible for four weeks paid vacation.' 'The Air Force gives responsibilities that the civilian world is unprepared to give a new employee.' 'The Air Force offers the opportunity to travel to new places and meet new people, and provides free dental and medical care and legal advice.' The most frequent reasons pilots and navigators listed as factors for returning to active duty were, first, the opportunity to fly again and, second, the Air Force "way of life" (37:A-2).

It is interesting to note among the letters received by AFMPC from those rated officers returning to active duty that none were written by pilots who had quit the airlines to return to the Air Force. This suggests the hypothesis than, unless furloughed, the Air Force is not going to get its pilots back once they have been hired by civilian airlines or freighter services. This highlights the point that efforts need to be made to help Air Force pilots fully realize how valuable the Air Force "way of life" is to them, personally, before leaving active duty with the perception that they will be hired by the airlines.

#### Internal

The Air Force has only touched on an area over which it has direct influence, assignment policies. Air Force

Pamphlet 36-6, the Assignment Information Directory (AID) is a recent innovation by AFMPC officials. This publication provides a view of how the rated officer assignment process operates and discusses assignment issues of current interest to aircrews (34:2). AFMPC has stated that responses from the field indicate that the AID has helped aircrews and unit commanders participate in the assignment process in an informed and more productive manner.

On the whole, however, the efforts to effectively improve the assignment policies of the Air Force have been considerably less productive than the pay and benefits issue. This is true in spite of the fact that pay is an area over which the Air Force does not have direct control. This is an empirical fact, not just a subjective opinion. Assignment policies has continued to be a major factor affecting the decision of a junior rated officer to separate from the Air Force.

In their AFIT thesis completed in 1980, Gulick and Laakman made some recommendations with regard to the assignment policies of the Air Force (15:66). One proposal was to allow a pilot to select the weapon system group of his choice if he was not satisfied with his current weapon system group. This would be done at the end of a pilot's first active duty service commitment, typically the sixth year of aviation service, and would be a one-time-only career choice. Although an analysis is beyond the scope of this thesis, we feel this proposal has some merit and should be extended to include

both pilots and navigators. Assigning a rated officer to a particular weapon system group upon initial completion of UFT and expecting him to remain satisfied and choose to remain in the Air Force is a little unreasonable. A serious study to include an analysis of the costs associated with such a program should be undertaken.

Another study that should be undertaken by AFMPC personnel officials, or as the subject of an AFIT thesis, is an investigation of the feasibility of instituting some type of time-freeze contract system for rated officers. Under this system, a rated officer would be offered the opportunity to enter into a contract or agreement with the Air Force whereby the Air Force, with concurrence of the service member, would agree to leave an individual assigned to a location for a particular number of years. Length of guaranteed assignment and the number of occasions an individual would be eligible for this program would have to be determined based on manning and assignment requirements of the Air Force.

This proposal would offer two advantages that warrant its further study. First, this proposal would address the problem that exists with regard to the timing of a particular assignment. It is the perception of the authors and of certain AFMPC officials that a rated officer may elect to separate from the Air Force not because he objects to the assignment, but because of the timing of the assignment (17). It may be an extremely sensitive time for him and his family to move due to school, dependent medical treatment requirements, or the

current status of his spouse's employment, for example. Extensive study of the feasibility of this proposal should be conducted before it could be considered for adoption.

The second advantage this proposal offers the Air Force is to save money. Reassignment of an individual costs the Air Force money in travel pay, dislocation allowance, household goods movement, etc. Fewer PCS moves could net the Air Force a savings in dollars that oftentimes are all too scarce.

The time-freeze contract would allow an individual an extended period of time at his current duty location for a reasonable purpose. There is not much the Air Force can do about the location of a job, but perhaps it can offer increased control of the timing involved. This would be a positive step toward managing people versus managing statistics and using people to make those hoped-for statistics come true.

#### Summary

The entire area of rated retention must be addressed in view of those factors affecting turnover which can be dealt with internally, those external factors in which the Air Force can have only indirect influence, and those factors which are simply part of the environment in which the Air Force operates but over which it has no real control. Assignment policies is a factor which can be dealt with internally, but which has received considerably less attention than pay and benefits. Pay and benefits, while extremely important,

is an external factor over which the Air Force can have only an indirect influence. Civilian job opportunity is part of the external environment in which the Air Force operates, but over which it has no real control. It has been suggested that rated officers, however, could be given aid in seriously considering the value of the Air Force "way of life" before being lured into the civilian job market.

### Recommendations

As previously defined, the questions used to determine the factors affecting the turnover of pilots and navigators in the six to eleven year group that comprised the data base for this thesis were arrayed on a four-point Likert scale of 0 through 3. This differs from the 1980 AFIT thesis completed by Gulick and Laakman. Their data base used a ten-point Likert scale of 0 through 9, which is the scale that appears on the Exit Survey. The data provided by AFMPC for this thesis had been recoded to a four-point scale at AFMPC's direction. This factor may account for the significantly weaker  $R^2$  value we obtained as opposed to that obtained by Gulick and Laakman. In the future, for research purposes, we recommend that the data not be recoded. A better definition as to how strongly an individual feels about a particular issue affecting his separation from the Air Force could thereby be obtained.

The data collection instrument employed in this thesis, the Exit Survey, was not specifically designed to test the variables listed in this study. In the future, a survey

could be administered on a regular basis in order to trace the changing opinions of individual rated officers over time. This future study should be designed to more specifically measure expectations, opportunity, and the other determinants of turnover. However, the authors of this thesis feel that the data base that resulted from the Exit Survey could be used to investigate and at least partially test the theoretical models presented in Chapter I.

Finally, we recommend further research and study be undertaken concerning our two proposals to improve the general assignment policies of the Air Force.

### Conclusions

This thesis has been an effort to determine the factor or factors affecting the turnover of pilots and navigators. Previous research by the Blackburn and Johnson team and the Gulick and Laakman team were used to assist in conceptualizing and structuring this research effort.

As previously mentioned, the United States Air Force Officer Exit Survey was used as the data base for this thesis. The results for May 1979 through December 1980 were used and consisted of 410 pilot respondents and 130 navigator respondents.

One thing this research has shown is that no one factor is the sole cause of the problems the Air Force has experienced in its retention of pilots and navigators. This is to be expected when dealing with a personal decision such

as the decision to leave the Air Force. In the case of pilots and navigators, we were able to determine which factors had a statistical relationship with the turnover decision. In turn, recommendations were made by the authors for possible improvements in the assignment policies of the Air Force. Our efforts were directed in this area since we felt less attention had been given this factor than others such as pay.

Rated officer retention is a concern that must continually be addressed and not placed on the back burner when retention rates are good. Indeed, we can make this same comment regarding all Air Force personnel and the many and varied specialty codes they represent. In working with the Congress concerning areas which the Congress controls and doing everything it can to improve those internal factors over which the Air Force has a great deal of jurisdiction, perhaps the Air Force can alleviate or make less severe any problems it might face in the future in retaining its rated personnel. Our effort has not been to alienate anyone, but rather to voice what we feel are some valid concerns among the rated force.

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**APPENDIX A**  
**AIR FORCE EXIT SURVEY**

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# United States Air Force



## OFFICER EXIT SURVEY

**USAF SCN 79-45**

#### PRIVACY ACT STATEMENT

In accordance with paragraph 36, AFR 12-35, Air Force Privacy Act Program, the following information about this survey is provided:

- a. Authority. 10 U.S.C., 3012, Secretary of the Air Force: Powers and Duties, Delegation by.
- b. Principal Purpose. Survey conducted to identify factors contributing to officers' decision to separate from the Air Force.
- c. Routine Use. The survey data will be converted to statistical information for use in evaluating AF programs and policies.
- d. Participation in this survey is entirely voluntary.
- e. No adverse action of any kind may be taken against any individual who elects not to participate in this survey.

# OFFICER EXIT SURVEY

INSTRUCTIONS: Indicate your answers by circling appropriate letters in this question booklet. Select only one response to each question.

## DEMOGRAPHICS

1. What is the first digit of your duty AFSC? (If your duty AFSC were 6724, you would circle the letter G on your booklet for question 1.)
 

A. 0	C. 2	E. 4	G. 6	I. 8
B. 1	D. 3	F. 5	H. 7	J. 9
2. What is the second digit of your duty AFSC?
 

A. 0	C. 2	E. 4	G. 6	I. 8
B. 1	D. 3	F. 5	H. 7	J. 9
3. What was your aeronautical rating and primary duty when you decided to separate?
 

A. I was not rated
B. Pilot, primarily flying duty
C. Pilot, primarily non-flying duty
D. Navigator, primarily flying duty
E. Navigator, primarily non-flying duty
F. Other
4. To which organization are you assigned?
 

A. Alaskan Air Command	N. Air Force Data Automation Agency
B. US Air Force Academy	O. Air Force Audit Agency
C. Aerospace Defense Command	P. Military Airlift Command
D. US Air Forces in Europe	Q. Pacific Air Forces
E. Air Force Accounting and Finance	R. Strategic Air Command
F. Air Force Logistics Command	S. Tactical Air Command
G. Air Force Systems Command	T. USAF Security Service
H. Air Reserve Personnel Center	U. Air Force Manpower and Personnel Center
I. Air Training Command	V. Air Force Inspection and Safety Center
J. Air University	W. Air Force Communications Service
K. Air Force Office of Special Investigation	X. Other
L. Headquarters Air Force Reserve	
M. Headquarters USAF	
5. What is your present grade?
 

A. O-1
B. O-2
C. O-3
D. O-4
E. O-5
6. What is your active duty component?
 

A. Regular officer
B. Career reserve officer
C. Reserve officer (non-career)
7. What was your age on your last birthday?
 

A. Less than 27 years old	F. 31 years old
B. 27 years old	G. 32 years old
C. 28 years old	H. 33 years old
D. 29 years old	I. 34 years old
E. 30 years old	J. 35 years or over

8. What are your total years of active federal military service (TAFMS)?
- |                      |                     |
|----------------------|---------------------|
| A. Less than 4 years | G. 9 years          |
| B. 4 years           | H. 10 years         |
| C. 5 years           | I. 11 years         |
| D. 6 years           | J. 12 years         |
| E. 7 years           | K. 13 years or more |
| F. 8 years           |                     |
9. What are your total years of active federal commissioned service (TAFCS)?
- |                      |                     |
|----------------------|---------------------|
| A. Less than 4 years | G. 9 years          |
| B. 4 years           | H. 10 years         |
| C. 5 years           | I. 11 years         |
| D. 6 years           | J. 12 years         |
| E. 7 years           | K. 13 years or more |
| F. 8 years           |                     |
10. What is your marital status?
- |                       |                               |
|-----------------------|-------------------------------|
| A. Married            | C. Divorced and not remarried |
| B. Never been married | D. Legally separated          |
|                       | E. Widower/Widow              |
11. What is the source of your commission?
- |                            |                               |
|----------------------------|-------------------------------|
| A. Service Academy         | D. ROTC                       |
| B. OTS (prior service)     | E. Direct (prior service)     |
| C. OTS (non-prior service) | F. Direct (non-prior service) |
12. Think back to when you were commissioned and began active duty. What was your intent in regard to making the Air Force a career?
- |   |
|---|
| A. Definitely would make the Air Force a career     |
| B. Probably would make the Air Force a career       |
| C. Leaned toward making the Air Force a career      |
| D. Undecided  |
| E. Leaned toward not making the Air Force a career  |
| F. Probably would not make the Air Force a career   |
| G. Definitely would not make the Air Force a career |

COMMENTS: \_\_\_\_\_

13. Including your current assignment, how many PCS moves have you had during your Air Force career (exclude initial active duty PCS)?
- |      |      |               |
|------|------|---------------|
| A. 1 | E. 5 | I. 9          |
| B. 2 | F. 6 | J. 10 or more |
| C. 3 | G. 7 |               |
| D. 4 | H. 8 |               |
14. What is your reaction to the number of PCS moves you have had to make?
- |                          |
|--------------------------|
| A. Would have liked more |
| B. About right           |
| C. Would have liked less |
| D. Would have liked none |

COMMENTS: \_\_\_\_\_

15. Overall, how satisfied have you been with your past active duty assignments?

- A. Very satisfied
- B. Moderately satisfied
- C. Slightly satisfied
- D. Slightly dissatisfied
- E. Moderately dissatisfied
- F. Very dissatisfied

COMMENTS: \_\_\_\_\_

16. Overall, how satisfied has your spouse/family been with your past assignments?

- A. Very satisfied
- B. Moderately satisfied
- C. Slightly satisfied
- D. Slightly dissatisfied
- E. Moderately dissatisfied
- F. Very dissatisfied
- G. Not applicable. No spouse or family

COMMENTS: \_\_\_\_\_

17. When first deciding whether to separate, if you could have received the ASSIGNMENT you MOST WANTED, would you have remained in the Air Force?

- A. Yes, definitely
- B. Yes, probably
- C. Not sure/undecided
- D. No, probably not
- E. No, definitely not

What would it have been (Job or Aircraft/ Base)? \_\_\_\_\_

18. Have representatives from your base briefed you on the officer career progression plan?

- A. Yes, and the briefing was adequate
- B. Yes, but the briefing was not adequate
- C. No
- D. Not sure/don't remember

19. Thinking back over your total active duty service in the Air Force, consider the POSITIVE versus the NEGATIVE aspects of your past experience in the Air Force. In balance, how would you rate your career?

- A. Positive aspects far outweigh the negative
- B. Positive aspects somewhat exceed the negative
- C. Positive aspects balance with negative
- D. Negative aspects somewhat exceed the positive
- E. Negative aspects far outweigh the positive

The following statements represent certain issues which may have contributed to your leaving the Air Force. Using the scale illustrated below, rate each issue on how much it contributed to your decision to separate from the Air Force. Although certain issues may have irritated you, we are concerned only with those which contributed to your final decision to separate. Note that the scale shows different degrees of contribution, from no contribution (0) to major contribution (7, 8, or 9). Beside each statement (issue) enter the appropriate scale value (0 thru 9) in the space provided.

	0	1	2	3	4	5	6	7	8	9
No Contribution	Minor Contribution			Moderate Contribution			Major Contribution			
_____	20. General erosion of benefits									
_____	21. Inadequate medical and dental care for self									
_____	22. Inadequate medical and dental care for dependent(s)									
_____	23. Actual amount of pay too small									
_____	24. Flight pay too small									
_____	25. Annual pay increases too small									
_____	26. Uncertainty resulting from proposed changes in retirement system									
_____	27. Duty hours too long									
_____	28. Unstable flight schedule									
_____	29. Too many additional duties									
_____	30. Low prestige of military profession									
_____	31. Too much ancillary training									
_____	32. Not enough flying time									
_____	33. Unable to fly during entire career									
_____	34. Unhappiness with work group									
_____	35. Supervision and leadership at unit/squadron level									
_____	36. Supervision and leadership above unit/squadron level									
_____	37. Excessive family separation due to TDY									
_____	38. Excessive family separation due to PCS									
_____	39. Controlled OER(s) received in the past									
_____	40. Other OER(s) received									
_____	41. Promotion opportunity									
_____	42. Little say in future assignments									
_____	43. Inability to cross-train from one weapon system to another									
_____	44. Unsatisfactory aircraft/job assignment(s) in the past									

- \_\_\_\_\_ 45. Unsatisfactory location of assignment(s) in the past
- \_\_\_\_\_ 46. Unsatisfactory future assignment(s)
- \_\_\_\_\_ 47. Career uncertainty due to up-or-out management system
- \_\_\_\_\_ 48. Too many petty restrictions
- \_\_\_\_\_ 49. Requirement for career broadening assignment(s)
- \_\_\_\_\_ 50. Lack of opportunity for career broadening assignment(s)
- \_\_\_\_\_ 51. Lack of adequate recognition
- \_\_\_\_\_ 52. Too many inspections
- \_\_\_\_\_ 53. Lack of opportunity to demonstrate initiative
- \_\_\_\_\_ 54. Inadequate authority to carry out responsibilities
- \_\_\_\_\_ 55. Policies/procedures which undermine stature of an officer
- \_\_\_\_\_ 56. Spouse's job opportunity/income
- \_\_\_\_\_ 57. Lack of family acceptance of Air Force way of life
- \_\_\_\_\_ 58. Opportunity to fly with the airlines
- \_\_\_\_\_ 59. Civilian job opportunities (non-airlines)
- \_\_\_\_\_ 60. Higher pay in civilian job (over the long term)
- \_\_\_\_\_ 61. More job satisfaction in civilian job
- \_\_\_\_\_ 62. More geographic stability in civilian job
- \_\_\_\_\_ 63. More job security in civilian job
- \_\_\_\_\_ 64. More freedom and independence in decision-making in civilian job
- \_\_\_\_\_ 65. Better people to work with in civilian job
- \_\_\_\_\_ 66. Less family separation in civilian job
- \_\_\_\_\_ 67. My chances of being promoted

68. You have indicated a number of factors which contributed to your decision to separate. Looking back on all of this, can you identify ONE SPECIFIC INCIDENT/situation, or factor that convinced you it was time to get out? In other words, "What was the straw that broke the camel's back?" (If there was no single incident and your decision was the result of an accumulation of factors, please check the block below.)

☐ No single incident

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

69. Which one of the factors listed below would have been most influential in keeping you in the Air Force? (Indicate letter of choice.) \_\_\_\_\_

70. Which one of the factors listed below would have been second most influential in keeping you in the Air Force? (Indicate letter of choice.) \_\_\_\_\_

- A. Improved medical benefits
- B. Increased pay
- C. Increased flight pay, bonuses, or continuation incentives
- D. Guaranteed no changes to the present retirement system
- E. Stronger senior leadership support of benefits & retirement system
- F. Career guarantee earlier than 0-4 selection point
- G. Reduced duty hours
- H. Increased decision authority at low levels
- I. Reduced TDY
- J. Improved flight scheduling
- K. Reduced additional duties
- L. Fewer remote and overseas tours
- M. Improved promotion opportunity
- N. Increased control over assignments
- O. Up-or-out management system discontinued
- P. Reduced uncertainty about periodic pay increases and other benefits
- Q. Improved assignment location
- R. Better aircraft assignment selection
- S. Just be able to fly
- T. Increased sensitivity of supervisors
- U. Fly another weapon system (fighter-type, not including trainer)
- V. Fly another weapon system (multi-engine type)
- W. Increased prestige of military profession
- X. Other (specify): \_\_\_\_\_

71. How long a period of time was it from when you FIRST began to have doubts about an Air Force career until you put in your separation papers?

- |               |  |
|---------------|--|
| A. 1 month    | F. 10-12 months  |
| B. 2 months   | G. 13-18 months  |
| C. 3 months   | H. 19-24 months  |
| D. 4-6 months | I. 25-36 months  |
| E. 7-9 months | J. 37 months or more   |
|               | K. Not applicable. Never planned to make the Air Force a career. |

72. Have you discussed your decision to separate with your commander or his representative?

- A. Yes
- B. No

If no, please explain: \_\_\_\_\_

73. Was there an attempt made by your commander or his representative to encourage you to change your mind and remain in the Air Force?

- A. Yes
- B. No
- C. Not applicable. My commander is unaware of my decision.

If you were dissatisfied with the attempt, please comment: \_\_\_\_\_

74. Would you be interested in discussing your decision to separate with a counselor of your choice?

- A. Yes
- B. No

If you have a preference, please designate an individual or office and provide your name along with how you can be contacted: \_\_\_\_\_

75. What are your plans for the immediate future after separation?

- A. Have job waiting
- B. Have job offer, not yet accepted
- C. Am looking for a job
- D. Return to school
- E. Not seeking employment or schooling
- F. Part-time employment
- G. Self-employment
- H. Don't know/not sure
- I. Other \_\_\_\_\_

76. What type of employment are you interested in

- A. Airline
- B. Full-time reserve
- C. Agriculture, forestry, fisheries, mining
- D. Manufacturing
- E. Communication, utilities, transportation (other than airline)
- F. Wholesale, retail trade
- G. Finance, insurance, real estate
- H. Business services, entertainment
- I. Education
- J. DOD or military services as a civilian
- K. Other federal government as a civilian
- L. Other government
- M. Medical, legal practice, hospital, church, other community work
- N. Not applicable. I'm not interested in employment.
- O. Other (specify) \_\_\_\_\_

77. In the first year after separating, how do you expect your civilian income to compare with what you would have made in the Air Force?

- |                             |                         |
|-----------------------------|-------------------------|
| A. Civilian much higher     | E. Military much higher |
| B. Civilian somewhat higher | F. Don't know           |
| C. About the same           | G. Not applicable       |
| D. Military somewhat higher |                         |

78. Over the next five to ten years, how would you compare your expected civilian income to what you would have expected in the military?

- |                             |                         |
|-----------------------------|-------------------------|
| A. Civilian much higher     | E. Military much higher |
| B. Civilian somewhat higher | F. Don't know           |
| C. About the same           | G. Not applicable       |
| D. Military somewhat higher |                         |

79. Do you plan to join the Guard or Reserve?

- |                                    |                                 |
|------------------------------------|---------------------------------|
| A. Not sure                        | D. Yes, but waiting for vacancy |
| B. No                              | E. Yes, have not yet contacted  |
| C. Yes, already accepted by a unit | the Guard or Reserve            |

80. If you had to do it all over again, would you enter the Air Force (at least until completion of initial obligation)?

- |                        |                       |
|------------------------|-----------------------|
| A. Yes, definitely     | D. No, probably not   |
| B. Yes, probably       | E. No, definitely not |
| C. Not sure/don't know |                       |

81. Would you recommend the Air Force to an interested young man or woman (at least until completion of initial obligation)?

- |                        |                       |
|------------------------|-----------------------|
| A. Yes, definitely     | D. No, probably not   |
| B. Yes, probably       | E. No, definitely not |
| C. Not sure/don't know |                       |

82. Are there any other comments you would like to make?

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83. What other questions should we be asking to understand why officers are separating from the Air Force?

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THE FOLLOWING QUESTIONS ARE TO BE ANSWERED BY PILOTS/NAVIGATORS ONLY:

84. In what major weapon system group did you last perform primary flying duty?

- |  |   |
|--|---|
| A. Fighter   | G. Strategic Airlift (C-141, C-115/117, WC-119, C-140, C-9) |
| B. Tactical Reconnaissance (RF4, RF101, etc)       | H. Tactical Airlift (includes all C-119 series)             |
| C. Interceptor                                     | I. Helicopter   |
| D. Trainer   | J. Medical Evacuation                                       |
| E. Strategic Bomber/Reconnaissance                 | K. Mission Support  |
| F. Tanker (KC/RC/EC-119, E-3, E-4 and C-7/119/123) | L. Other  |

85. For how many total years did you perform flying duty (include primary line cockpit, mission aircraft, and flying training)?

- |            |                     |
|------------|---------------------|
| A. 1 year  | H. 8 years          |
| B. 2 years | I. 9 years          |
| C. 3 years | J. 10 years         |
| D. 4 years | K. 11 years         |
| E. 5 years | L. 12 years         |
| F. 6 years | M. 13 years or more |
| G. 7 years |                     |

86. For how many total commissioned years did you perform non-flying duty (i.e., support jobs or staff jobs which do not include mission aircraft flying)?

- |  |                     |
|--|---------------------|
| A. 0 years, all my jobs were flying jobs | H. 7 years          |
| B. 1 year                                | I. 8 years          |
| C. 2 years                               | J. 9 years          |
| D. 3 years                               | K. 10 years         |
| E. 4 years                               | L. 11 years         |
| F. 5 years                               | M. 12 years         |
| G. 6 years                               | N. 13 years or more |

87. When you entered the Air Force did you plan to use the pilot or navigator training and flying experience you would gain to eventually fly for the airlines?

- A. Yes  
B. No  
C. Undecided

COMMENTS: \_\_\_\_\_

88. Would you recommend pilot duty in the Air Force to an interested young man or woman?

- |                        |                       |
|------------------------|-----------------------|
| A. Yes, definitely     | D. No, probably not   |
| B. Yes, probably       | E. No, definitely not |
| C. Not sure/don't know |                       |

89. Would you recommend navigator duty in the Air Force to an interested young man or woman?

- |                        |                       |
|------------------------|-----------------------|
| A. Yes, definitely     | D. No, probably not   |
| B. Yes, probably       | E. No, definitely not |
| C. Not sure/don't know |                       |

---

**APPENDIX B**  
**LINEAR REGRESSION MODEL**

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 \\ + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11}$$

where

Y = the dependent variable

$\beta_0$  = the intercept value

$\beta_1$  = the potential coefficient of the first independent variable

$X_1$  = adscript of  $\beta_1$  that is the value of the determinant, opportunity

$\beta_2$  thru  $\beta_{11}$  = the partial coefficient of the second thru eleventh independent variables

$X_2$  = adscript of  $\beta_2$  that is the value of the determinant, tenure

$X_3$  = adscript of  $\beta_3$  that is the value of the determinant, pay and benefits

$X_4$  = adscript of  $\beta_4$  that is the value of the determinant, promotion

$X_5$  = adscript of  $\beta_5$  that is the value of the determinant, peer group integration

$X_6$  = adscript of  $\beta_6$  that is the value of the determinant, role clarity

$X_7$  = adscript of  $\beta_7$  that is the value of the determinant, job autonomy

$X_8$  = adscript of  $\beta_8$  that is the value of the determinant, satisfaction with supervisory style

$X_9$  = adscript of  $\beta_9$  that is the value of the determinant, past assignments

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$X_{10}$  = adscript of  $\beta_{10}$  that is the value of the determinant, assignment policies

$X_{11}$  = adscript of  $\beta_{11}$  that is the value of the determinant, family considerations

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**BIOGRAPHICAL SKETCHES**

Captain Richard A. Bonnell graduated from Davis and Elkins College on 4 June 1972 with a Bachelor of Arts Degree in Business Management. Upon graduation, Captain Bonnell was commissioned a second lieutenant through the Reserve Officer Training Corps. His first assignment in the Air Force was as Commander of the Headquarters Squadron Section, 509th Bombardment Wing, Pease AFB, New Hampshire, from 1972 to 1976.

In 1976 Captain Bonnell applied for and was accepted for Undergraduate Navigator Training at Mather AFB, California. Following completion of navigator training in 1977, Captain Bonnell reported to Travis AFB, California, for duty as a C-141 navigator with the 86th Military Airlift Squadron. While in this assignment, Captain Bonnell acquired over 1,000 flying hours in the C-141 in addition to serving as the squadron executive officer.

Captain Bonnell was selected for reassignment to the 22 Air Force Operations Center in 1979 to serve as the numbered Air Force aircrew resource manager. On 4 June 1980, he reported to the AFIT School of Systems and Logistics, Wright-Patterson AFB, Ohio, to study for a Master of Science degree in Logistics Management.

Captain Bonnell has been assigned to rated supplement duty with the 436th Supply Squadron, Dover AFB, Delaware.

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First Lieutenant Kenneth D. Hendrick graduated from the United States Air Force Academy on 31 May 1978 with a Bachelor of Science Degree in History. Before being selected for AFIT, Lieutenant Hendrick was an air weapons controller for the 7 ACCS and was stationed at Keesler AFB, Mississippi. During this assignment, Lieutenant Hendrick completed Squadron Officer School by correspondence and was an honor graduate of the Air Ground Operations School, which was conducted at Hurlburt Field, Florida. Most important, it was during this time period that he met and married his wife, Suzanne Kaye. Upon completion of AFIT, Lieutenant Hendrick will be assigned to Air Support Radar Team (ASRT) duty with the 6140th Tactical Control Flight at Osan AB, South Korea.